

# **SCHOLASTIC COACH**

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JANUARY, 1954

# **BUILDING**

AND

# **EQUIPMENT**

ISSUE • 25c

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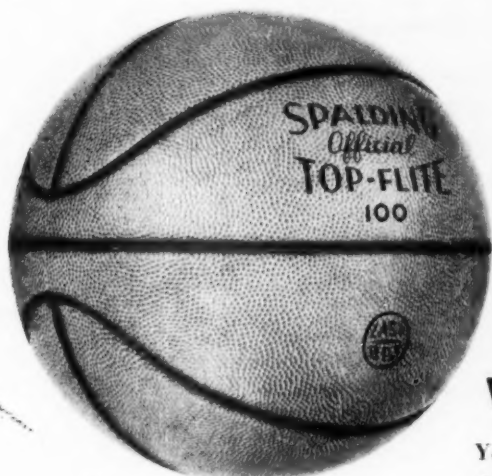
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# SCHOLASTIC COACH

Reg. U. S. Pat. Off.

**VOLUME 23 • NUMBER 5 • JANUARY**

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**Publisher • G. HERBERT McCracken**

**Editor • HERMAN L. MASIN**

**Advertising Manager • OWEN REED**

**Art Director • MARY JANE DUNTON**

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Note how the thick floating hood of Aire-Guard Vinyl is suspended free of the Tenite Plastic outer shell. The force of the sharpest blow never touches the top of the head.

The triple-thick suspended Aire-Guard Vinyl padding insulates the entire surface of the skull: absorbs and dissipates over 75% of any sudden shock.

Side padding of Aire-Guard Vinyl is designed to give full protection as well as to avoid impairing hearing, and to allow ample ventilation for the scalp.

The Head Cushion is scientifically designed to protect the base of the skull and other vital areas from violent impact.

Newly designed Foam Rubber Cushion padded chin strap.



*Rawlings*

There are no straps to bind, no strings to tie, or knots to slip in Rawlings Head Cushion. It's self-adjusting!



## HEAD CUSHION

Football's Safest, Surest  
Head Protection!

It's another sensational first by Rawlings—a helmet that combines both the greatest of safety features ever devised to prevent head injuries in football—Rawlings exclusive triple-thick hood of Aire-Guard Vinyl that closely fits around the head, floating freely suspended in the new and rugged Tenite Plastic shell.

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featherbed, while the shell is a buffer safeguard that never touches the top of the inside padding. All the surface of the head—the vital area at the base of the skull—the critical regions around the ears, jawbones, cheek bones and forehead—are doubly protected against every quick and dangerous impact.

Every coach should see them, try them, to prove to himself that here is the surest and best protection against head injuries ever developed—the great new Rawlings Head Cushions . . .



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Look for the Label in the garment that identifies the Skinner fabric of your choice.



Skinner Combat Cloth\* Strongest of all Skinner Athletic fabrics. Fast color, light weight, 100% nylon. Favorite for football pants.



Skinner Tackle Twill\* fabric. Color and flash, with special stamina for tough wear. Vat dyed, fast color, water repellent rayon and cotton.



Skinner "8217"\* The standard satin for basketball trunks, warm-up jackets and softball uniforms. High lustre, vat dyed, fast color, rayon face, cotton back satin.

WILLIAM SKINNER & SONS  
NEW YORK 3, NEW YORK  
\*T. M. Reg. U. S. Pat. Off.



# Iron men, feeble football

**T**HE most fascinating fashion note of the late football season was the poodle cut jersey unveiled in the Oklahoma-Notre Dame game.

With the mercury hovering around the 92° mark, the Messrs. Wilkinson and Leahy accoutered their lads in special featherweight jerseys featuring quarter-length sleeves. Though really little more than glorified T shirts, they were just the thing for the tropical heat.

And that wasn't all. To combat the glare of the sun, M. Wilkinson had his bench warmers wearing green eye-shades, while M. Leahy had his substitutes outfitted with tropical helmets!

A stranger blundering into the ball park might have thought he was busting in on a convention of bookkeepers and lion tamers.

**E**VER since the NCAA rules doctors eviscerated free substitution, our football experts have been cluttering the public prints with allegations that the elimination of two-platoon football is (1) the greatest thing that's ever happened to football, or (2) the worst thing that's ever happened to football.

Even now, after a full season of play under the new rule, it's hard to sift fact from fiction, to balance one argument against another. One day a Southern group reveals that one-platoon football has drastically reduced injuries. Next day, a Midwestern body issues a report proving that one-platoon football has drastically increased injuries!

Well, the time for decision has arrived. As we write this, the rules committee is huddling in Cincinnati to overhaul the code. Insofar as the restricted sub rule is concerned, the big brass will be called upon to answer three questions:

1. Has the new rule reduced the enormous operational costs which were bankrupting the football programs of many colleges?

2. Has the new rule produced more or fewer injuries?

3. Has the quality of the game been retained under the new rule?

As you might remember, the rules men were most concerned with Point No. 1 when they killed two-platoon football. All right, then: Did the new rule reduce operational costs?

We doubt it. Since the size of both coaching staffs and squads remain about the same, we can't see how any great savings have been effected. Have any of the schools which gave up football returned to the fold? Not that we know of.

So, until evidence to the contrary is forthcoming, we don't think the restricted sub rule can be deemed an economical success.

Point No. 2, the matter of injuries, must likewise be left in abeyance until some reliable nationwide statistics are produced.

This brings us to the most vital point of all—the effect of the restricted sub rule on the quality of play.

Exactly a year ago, we wrote: "We don't think there'll be a perceptible difference in the brand of football next fall (1953). Only the real football fan will notice the subtle deceleration in pace, miss the crisp blocking and tackling from start to finish, and the perfection of the specialists."

We think we hit the oblate spheroid right on the proboscis. Even the worst enemy of free substitution will have to admit that the game slowed up last fall. Statistics reveal an average of 20 less plays a game. And the quality of the play was distinctly inferior.

While football's moldy old figs were gurgling happily over the return to "red-blooded, iron-man football," the perfectionists were sobbing in their celery tonic. The difference between the college and pro games widened to grand canyon proportions.

Watching a Saturday college game and then a Sunday pro contest was a strange experience. It was like watching a Class B baseball team one day and the New York Yankees the next. The pros seemed to move twice as fast—and with twice as much finesse.

So what? So this: When you're competing for the dollar, as the colleges and pros are more or less doing, you don't step back and let the opposition take the play away from you. You keep trying to improve the quality of your game, not impair it.

We don't think it's an accident that the pros this year showed a huge increase in attendance—and they did it without any exciting new faces or changes in the structure of the game. They simply offered a superior type of football—two-platoon right down the line.

We'd like to hear this explained by the experts who claim that the public doesn't go for two-platoon football, that it's too confusing to them. If this were true, they'd stay away from the pros instead of coming to them in increasing numbers.

Take the editors of *Sport Magazine* (and a fine publication it is), for example. At the beginning of the season, they rejoiced in the return to the one-platoon game because they "went to three Columbia games in a row last fall and never did learn the name of the Lions' regular offensive left guard."

Did they learn it this year? And if they did, did it make them happy—increase their enjoyment of the game? And what fun can you get out of watching a guard, anyhow?

We said it once and we say it again: What's so confusing about a simple change in teams? Is there a human being over three who cannot understand that one team plays offense and another defense, and that the teams switch whenever possession is lost or gained?

(Continued on page 66)



# Only the **NEW** exclusively patented Wilson **HELMETS** give such effective **IMPACT DISSIPATION**

In these 1954 Wilson helmets, the light weight yet amazingly durable, one-piece shell is molded from a superior **TENITE** formula.

## **WILSON (Patented) COMPOSITE PADDING IS AMAZING**

Helmets TP and TU include Wilson composite impact dissipating padding of *Ensolite* and Latex Foam—known to have the most modern impact dissipating value. Provides the highest degree of protection against injurious head blows yet attained.

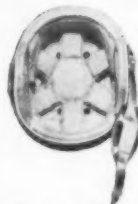
Helmets TC, TH and TL include Wilson new Vinyl Foam and Latex Foam composite padding. All helmets in molded brilliant colors.

Choose from these **FIVE** Special types of newest inner-construction

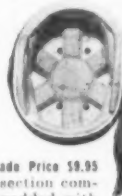


Wilson's NEW 1954 Helmets will be identified by these five two-letter combinations... TP, TU, TC, TH and TL.

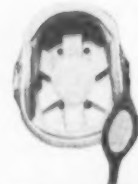
**TP—Trade Price \$16.95**  
Composite padding of *Ensolite* and Latex Foam Rubber, distinctive white leather lining. Crown padding positioned on three 1½-inch web suspensions. Military-type, formed and padded chin strap.



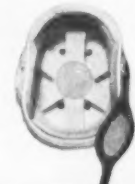
**TU—Trade Price \$14.95**  
Same padding material as TP, but styled in popular 6-point, navy-type suspension. Composite padding throughout. Same new padded chin strap.



**TC—Trade Price \$12.95**—6-point, navy-type suspension. Composite padding throughout of Vinyl Foam and Latex Foam. All padding covered with rich tan leather. Standard military-type chin strap.



**TH—Trade Price \$9.95**  
Lower section composite padded with Vinyl Foam and Latex Foam as is top of 6-point web suspension. Tan leather covered. Same chin strap.



**TL—Trade Price \$7.95**  
Same suspension and lower padding as TH with leather circle at top. Same chin strap. The most outstanding protective helmet of this quality ever produced for the price.

IT'S **Wilson**  
TODAY IN SPORTS EQUIPMENT

WILSON SPORTING GOODS CO., CHICAGO, Offices in New York, San Francisco and 26 other principal cities  
(A subsidiary of Wilson & Co., Inc.)



**Patent No. 2,634,415**

The United States Patent Office has declared **WILSON** first. Each of the five **NEW WILSON HELMETS** for 1954 will carry this Patent Number—2,634,415—on the back.



# Lighting the Way to \$

*Why and how many Indiana high schools are finding it extremely lucrative to play their grid games at night*

**F**OOTBALL under the lights is extremely popular throughout the Hoosier state, and particularly so in the city of Indianapolis. The advantages of night football might be enumerated as follows:

1. Absolutely no lost time from school.

When games are played in the afternoon, it's necessary to excuse the players from classes as early as 11:30 A.M. to prepare for a home game scheduled at 1:30 P.M., especially in the latter part of the season. This happens once a week for ten weeks, which means that all members of the varsity miss at least ten half days of school.

If the games are played 60 to 70 miles away from home, it's necessary to excuse boys from school even earlier. This also creates the problem of caring for the coach's classes. (Oh yes, all the coaches in Indianapolis have seven periods of assignments the same as any other teacher.)

In addition to the team members being excused, all members of the student body who purchase tickets must be excused from at least two or three periods of classes to enable them to attend the home contests.

Football under the lights eliminates absolutely all loss of time from school.

2. Parents and adults may attend.

When games are played during the day, it's impossible for parents and other adults to attend (unless they have night work). This certainly is unfair to the adults.

Under the lights, the whole community may attend, which is most desirable. A fine community spirit develops and creates considerably more interest in the school as a whole.

3. Increased revenue.

Football under the lights couldn't possibly be condoned merely for the increased revenue it produces, except when this increase is channeled back into the athletic department for the promotion of the football program and, if possible, of other sport programs.

The additional revenue may be utilized to purchase more and better equipment to enable more boys to participate wearing the safest equipment possible, and to assure every boy of two or three complete changes a week.

## DISADVANTAGE OF NIGHT BALL

The outstanding objection to night football is the fear of rowdyism, use of alcohol, etc., by a small segment of the adults in attendance. This sort of thing has practically been eliminated in the Indianapolis public high schools through a concerted drive by our Board of School Commissioners, our Superintendent (Dr. H. L. Shiber), the Indianapolis newspapers, the Indianapolis Police Department, and the principals of each school.

During the past season, only three

## Comparison of Average Attendance Figures for Noon and Night Games

|              | Afternoon | Night |
|--------------|-----------|-------|
| Broad Ripple | 500       | 4000  |
| Manual       | 1000      | 2500  |
| Washington   | 1500      | 3000  |
| Tech         | 2000      | 4000  |
| Anderson     | —         | 2500  |
| Kokomo       | 800       | 3000  |
| Lafayette    | —         | 3500  |
| Logansport   | 1500      | 2500  |
| Muncie       | 2000      | 5000  |
| Newcastle    | 500       | 2000  |
| Richmond     | 500       | 5000  |

or four persons were apprehended for drinking alcohol. The minimum fine assessed by the judges (bless them) was \$100. In what better atmosphere could any group of young boys and girls spend Friday evenings than at a school function well-supervised by a large group of teaching personnel?

## LIGHTING SYSTEMS

Our own lighting plant at Arsenal Technical High School is very adequate, and several schools have patterned their systems after it. We have six poles, 100 feet in height, with ten lights mounted on each. Each light is 1500 watts, which gives us 90,000 watts of light. Our stadium seats 7500 in concrete stands.

The city high schools having lighted football stadiums include Broad Ripple, Manual Training, Cathedral, and Tech. The high schools not having lights played most of their games under the lights of (Concluded on page 57)

**By C. P. DAGWELL**

*Arsenal Tech H. S., Indianapolis, Ind.*



By **N. M. JORGENSEN**, *East Carolina College (Greenville, N. C.)*

**E**AST Carolina College opened its new health and physical education building in July, 1952. A contribution to the educational facilities of the campus and a structure of which the whole of Eastern North Carolina can well be proud, the building fulfills a long-felt need for modern facilities and equipment with which to carry on the work of the department.

Comprising ground and main floors, the imposing brick structure boasts an overall dimension of 180 x 160 feet. A long flight of stone steps leads to the entrance, a portico fronted by four white columns.

Three double doors open into the main lobby and on each side are located the offices of the staff members. (The building accommodates both the men's and women's departments.) Facing the lobby are the doors leading into the gymnasium on the main floor.

**Gym Floor Facilities.** Built of

maple, the gym floor has facilities for six badminton courts, three volleyball courts, and two standard-width basketball cross-courts. The main basketball court, equipped with swing-up glass backboards, also has synchronized electric scoreboards at each end of the floor.

The arched roof is constructed of porete plank, a texture which provides for excellent acoustics. (An instructor or coach conducting a class in such a large area knows the value of good acoustics.)

The walls of cream-colored glazed tile (as are the walls throughout the building, with the exception of the offices and classrooms) lend a pleasant, cheerful atmosphere.

Seating for 2397 spectators is provided in the gym. These accommodations include 525 permanent balcony seats and 1008 stationary folding seats on the west side and 864 removable folding seats on the east side.

**Indoor Swimming Pool.** A unique and very practical feature of the plant is the indoor swimming pool adjoining the main gym floor on the east. Separated from the gym by aluminum corrugated (electrically controlled) rolling panels, which can be opened in a few seconds, the pool is laid out so that the folding bleachers for the gym can be reversed and thus serve the dual purpose of providing 864 spectator seats for swimming meets and water pageants.

The pool, built of white ceramic tile, measures 35 x 75 feet, which complies with standard requirements for official meets. The depth ranges from three to 10 feet. One- and three-meter diving boards are placed at the deep end. Skylights admit natural light, while underwater lighting adds to the beauty of the pool.

Traveling rings suspended from the ceiling, which may be raised when not in use, add tremendously to the recreational enjoyment of the pool. The students get a big kick out of testing their skill in progressing

## A Small College Phys Ed



Fully equipped 11' by 36' first aid room on ground floor.



Locker arrangement in the 35' by 47' varsity dressing room.

from one ring to another without losing their grip and plunging into the water beneath.

Separate spiral stairs for men and women lead from the pool to the showers and dressing rooms on the ground floor.

**Ground Floor.** Features of note on the ground floor include two adjoining classrooms separated by sliding doors. When combined, they may be used as a large lecture room and projection room, since they're equipped with an 8 x 10 foot screen and blinds to darken the room.

Immediately to the west of the projection room is a 64 x 23 foot combination corrective room and dance studio, furnished with large wall mirrors, stall bars, small mats, and other corrective equipment, some of which is removable and may be stored in a small adjoining storage space.

**Games Room.** The spacious 65 x 100 foot small games room offers a splendid area for instructional purposes. It also is used for larger classes in social, folk, and square  
(Concluded on page 59)

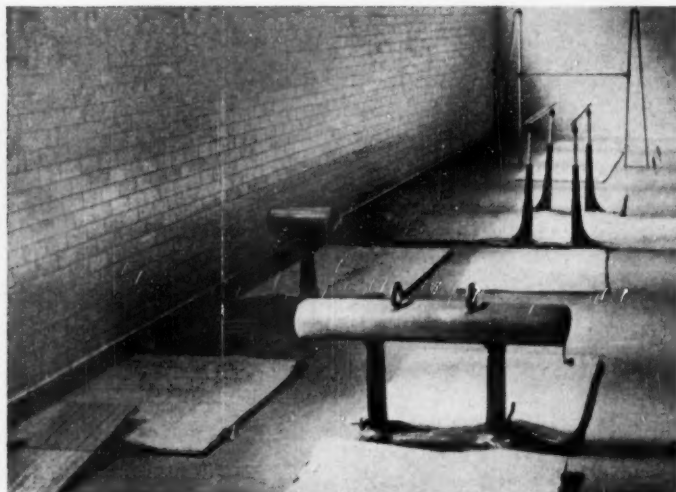


Front view of East Carolina's new \$750,000 model small-college plant.



Main gym (118' by 101') with reversible folding bleachers seating 2,500.

## Building



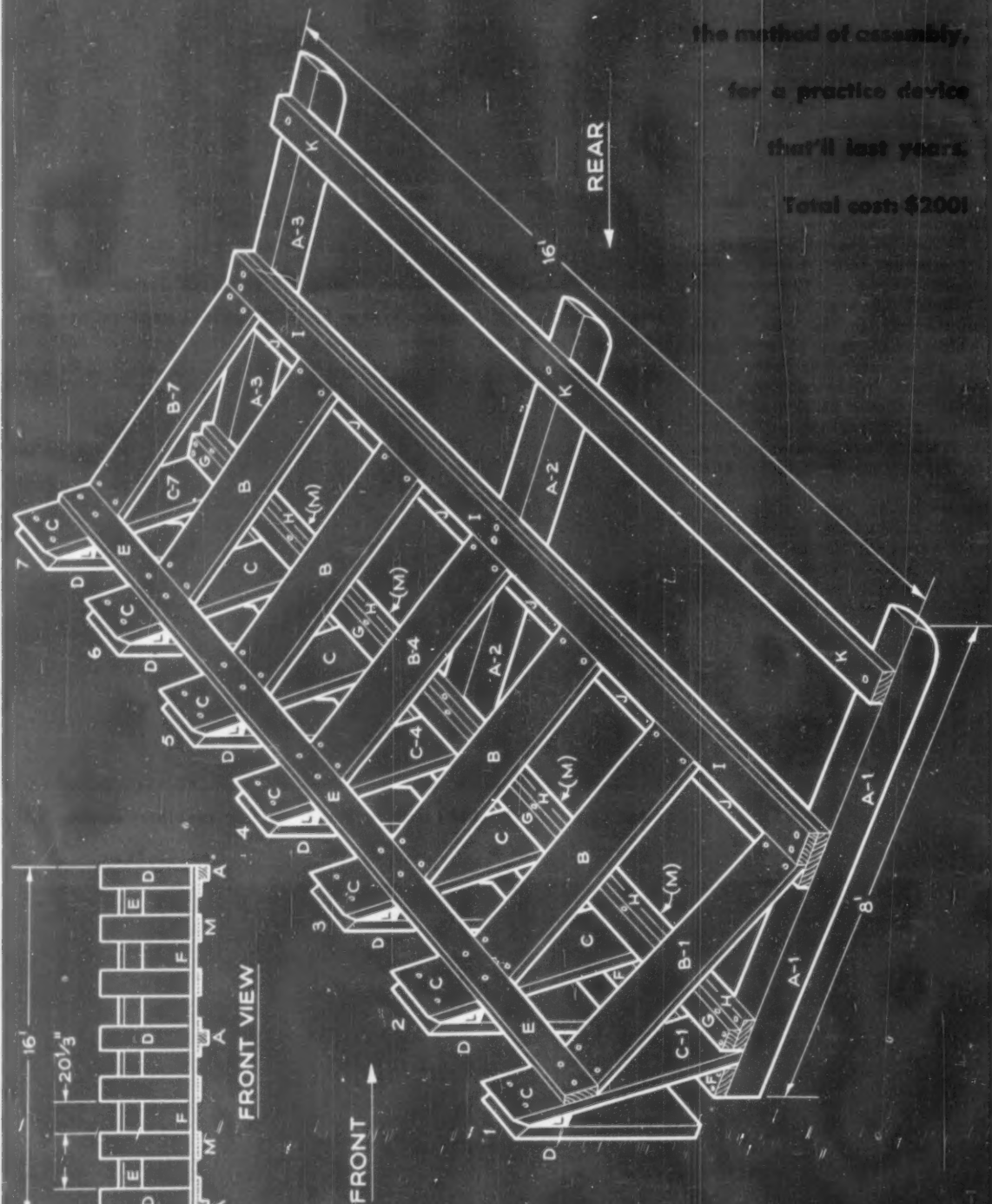
Section of 23' by 100' room for all types of apparatus work.



Swim pool showing opened panels, reversible bleachers.

Complete plans, including the  
selection of materials and  
the method of assembly,  
for a practice device  
that'll last years.

Total cost \$200!





# Your Own 7-Man Charging Sled

By DONALD E. FUOSS, *Shepherd College, Shepherdstown, W. Va.*

**M**OST football coaches consider a charging sled a necessity in (1) developing a hard, fast-charging line, (2) facilitating the teaching of blocking and tackling, (3) conserving time and manpower, and (4) developing the leg and back muscles.

Different types of charging sleds can be purchased from companies which specialize in such equipment. Where the budget permits, the purchase of professionally manufactured sleds is recommended. However, many high schools and small colleges cannot afford such products and must hence rely on their own carpentry.

The purpose of this article is to explain in detail how a heavy-duty seven-man charging sled can be constructed by any high school shop class or by a college maintenance department for less than \$200.

According to retail rates obtained in July, 1953, the cost of materials and supplies for the heavy-duty sled in the accompanying drawing would be as follows: white oak lumber, \$90-\$110; hardware, \$35-\$40; padding, canvas, paint and incidentals, not more than \$50.

If these materials and supplies are obtained through a school purchasing agent, a discount of at least 10% will be secured. If labor other than high school or college personnel is used, you may figure on an additional expense of approximately 60%. Under proper supervision, however, any high school shop class or college labor can do a satisfactory job of constructing the sled.

## SELECTION OF MATERIALS

In selecting the timber for the charging sled, one must take into consideration not only the different kinds of lumber, but whether to use lumber which is seasoned or green, dressed or rough. Wise decision in the selection

of lumber can mean a saving of \$30-\$50.

**Kind of lumber.** Though some manual training teachers recommend the use of pine, the author feels that white oak is best, with long-leaf yellow pine as second choice. White oak is not only more durable and cheaper, but is also heavier per cubic foot. Do not use red or black oak, red or white pine.

**Seasoned or green lumber.** Green lumber is cheaper in price and much heavier than seasoned lumber. For example, if seasoned white oak is used in the construction of the sled, it will weigh approximately 1240 lbs. The same amount of white oak, when green and not yet dried, will weigh approximately 1640 lbs.

The moisture content of seasoned timber is from 15%-20%, while in green timber the moisture content might be as high as 50%. Seasoned white oak that has been air-dried weighs 46 lbs. per cubic foot, while white oak which is green will weigh approximately 60 lbs. or more per cubic foot—depending on the moisture content in the green timber.

To give some indication of the weights per cubic foot of other kinds of seasoned lumber, they are as follows: long leaf yellow pine 44 lbs., white pine 26 lbs., red pine 30 lbs., red or black oak 41 lbs. per cubic foot.

These different kinds of lumber would weigh approximately  $\frac{1}{4}$  to  $\frac{1}{2}$  more of their seasoned weight if green lumber were used.\*

Seasoned white oak is recommended for the seven-man charging sled. Use white oak which is green, if a heavier sled is desired.

**Dressed or rough lumber.** Dressed lumber is not only easier to work with but offers a much neater finished appearance. However, it averages from 15%-25% more in price than rough lumber.

The term "rough lumber" does not denote warped or weather-beaten lumber. It merely means lumber which

has not been trimmed or dressed. Avoid using lumber that isn't straight and squared.

Rough lumber is not only acceptable but is usually preferred in the construction of a football sled.

## MATERIALS AND SUPPLIES

The materials and supplies for the seven-man charging sled include:

**Wood.** For simplicity, the information relating to the dimensions of the lumber is presented in the following order: the alphabetical letters which identify the different pieces of lumber in the drawing, the number of pieces, the thickness x width x length, and the name and/or purpose of each piece of lumber.

A: 3 pieces, 6" x 6" x 8', for sled runners with one end tapered.

B: 7 pieces, 2" x 10" x 4', for diagonal braces.

C: 7 pieces, 2" x 10" x 44", for sloped braces.

D: 7 pieces, 2" x 10" x 40", for charging surfaces.

E: 1 piece, 2" x 6" x 16', as front buffer for diagonal braces (B).

F: 1 piece, 2" x 6" x 16', as front support for sloped braces (C).

G: 1 piece, 2" x 4" x 16', as rear support for sloped braces (C).

H: 1 piece, 2" x 6" x 16', as rear buffer for sloped braces (C).

I: 1 piece, 2" x 6" x 16', as rear buffer for diagonal braces (B).

J: 1 piece, 2" x 10" x 16', as base-board for rear buffer (I) and diagonal braces (B).

K: 1 piece, 2" x 4" x 16', as rear brace for tapered ends of runners (A).

L: 7 pieces, 3½" x 10" x 13", for wedges between charging surfaces (D) and sloped braces (C).

M: 7 pieces, 2" x 10" x 13", as base-boards for sloped braces (C), and are located underneath and at right angles to supports (F and G) and buffer (H).

One might contemplate substituting three 8" x 8" x 8' timbers for the 6" x 6" x 8' timbers for sled runners. The larger timbers, if white oak, would add approximately 200-275 lbs.

(Continued on page 70)

\*American Institute of Steel Construction, Inc., *Steel Construction*, 1st ed.; American Institute of Steel Construction, Inc., New York, 1928, p. 144.

By ROLAND A. SPAHN

A.I.A., Spahn & Barnes, Architects

# The Steel-Frame Gym

**W**HEN Norwayne High School opened its new building last September, great interest was evinced in the adequacy of the physical education plant. Designed to serve grades 9 through 12 of a newly consolidated district in the North Central part of Wayne County, Ohio, the building was replacing the secondary school facilities of three communities and the physical ed plant had to be planned for the current school enrollment of 320 with an anticipated growth to 400.

The great difficulty in the planning lay in providing adequate facilities for the small high school without resorting to the age-old expediency of the combination auditorium-gymnasium. The problem

was acute, since the district has a low enrollment and is situated in an agricultural community with a low taxation structure for financing school construction.

The architects, after a careful cost analysis, devised a plan that permitted the segregation of the gymnasium so that a low-cost type of construction could be used for that portion of the building. A separate auditorium for full student assembly with complete stage facilities was constructed across the lobby.

The gymnasium was sized to meet all requirements of the building program. Its overall dimensions of 80' by 100' permitted a 48' by 80' basketball court and bleacher seating for approximately 1000.

This separate auditorium and gym building arrangement made for an ideal teaching situation. It allowed the full-time use of the auditorium for student activities at the same time it made the gym available for physical education every period of the day.

To make this economically possible, it was necessary to employ parts of a standard building. A rigid steel frame was selected with a metal roof deck. Roof insulation was added, and two-inch thick panels of asbestos board with insulating fiber core were used for walls.

The foundation walls were extended to permit the surfacing of the exterior walls with eight inches of masonry at some future time when more funds become available. For the present, the exterior walls are painted to blend with the face brick on the remainder of the building.

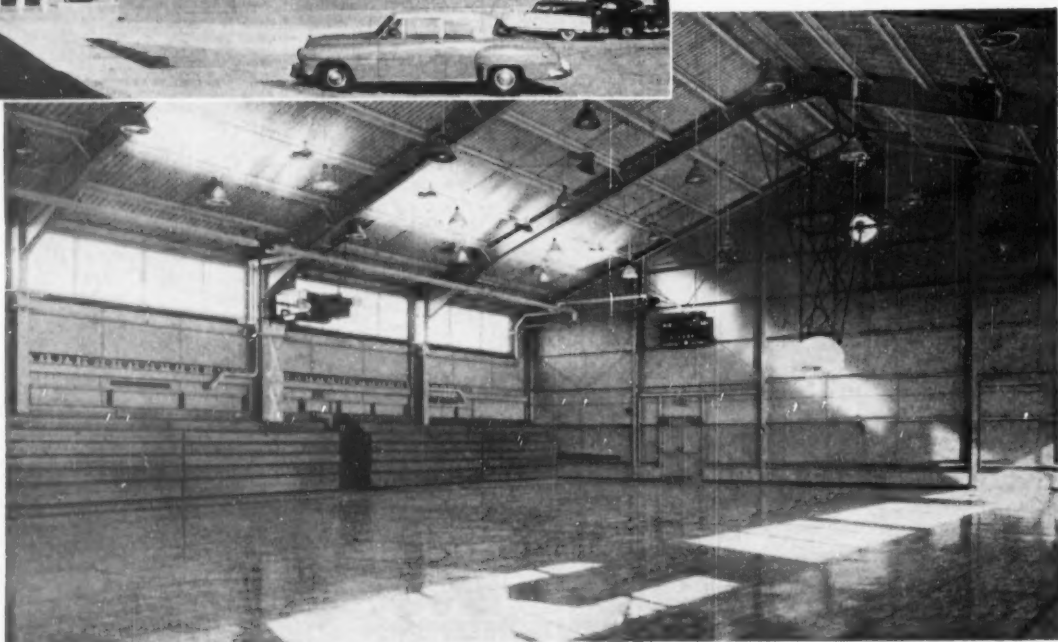
The gym floor was built over a concrete slab, on which was applied a waterproofing membrane and a half-inch thick impregnated cork for proper resilience. The finished

(Concluded on page 50)

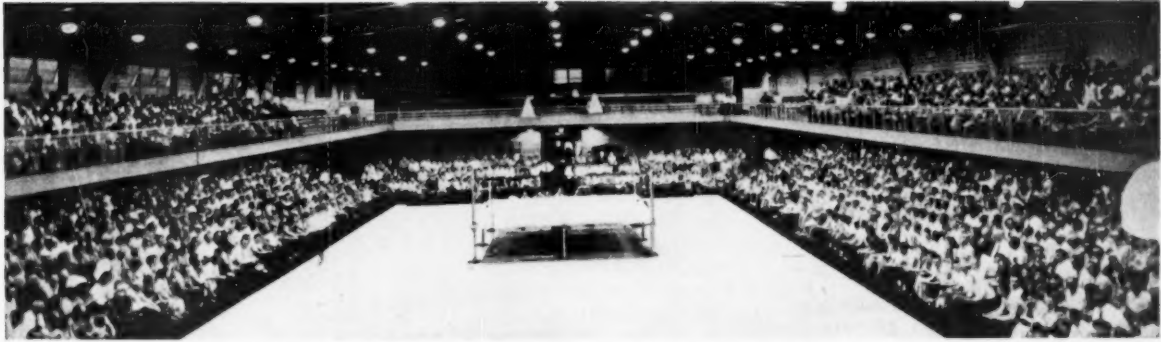


Norwayne H. S.'s compact, attractive new gym, employing a rigid steel frame with a metal roof deck. Lobby (upper left corner) separates gym and auditorium units. Modern gym court is 48' by 80' and features folding bleachers, hinged banks.

(Photos by R. M. Wilson)







A wrestling show in Crystal Lake (Ill.) H. S.'s ultra modern functional fieldhouse. Folding bleachers on all four balconies and the main floor provide maximum seating, yet can

be cleared away in a few minutes for phys ed classes. The ring is set up on the basketball court, which shows up white because of the glare of the lights on the shiny new finish.

**S**INCE health constitutes the first cardinal principle of education, this vital factor should be kept uppermost in mind when planning and designing new education facilities.

Insofar as the physical ed plant is concerned, an expensive, artistic basketball palace isn't the answer. It may be wonderful for the few boys on the varsity. But it hardly contributes toward an efficient health and physical education program for

the great mass of students. To offer the best type of program for the greatest number of students, our physical ed teachers need "acres" of floor space and "endless" wall areas—and the basketball arena is deficient in this respect.

In recent years, many progressive educators have been leaning toward the field house as the answer to their space problems. Justifiably, too. Less costly and more spacious than the conventional gym, it seems to offer

far more possibilities for both physical education and interscholastic sports.

Unfortunately, however, it poses a serious health problem. And that is *dust*—on the floor and in the air. The only way you can cope with this menace is by continual, costly sprinkling. And even then on humid days, the surface, instead of drying, will dissolve into a sea of mud. The shoe soles will become caked with slime, and this will be carried to the lockers.

When the mud dries out, it will begin falling off in the locker rooms, halls, classrooms, and basketball court. Foot traffic will pulverize the particles, and you'll wind up with an Oklahoma dust storm.

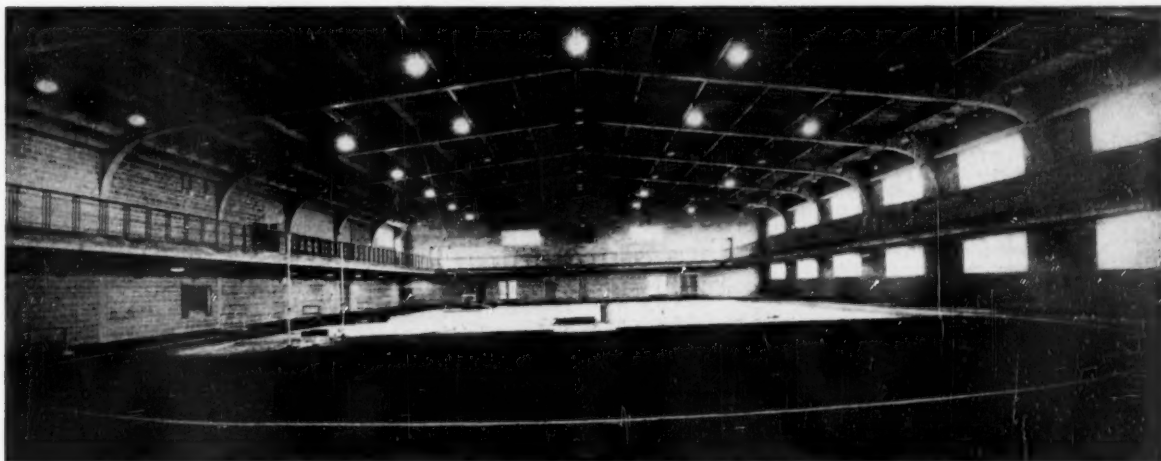
Despite this dust menace, the fieldhouse motif has always intrigued the school administrator. It has been felt that if the surfacing problem could be solved, the fieldhouse would open new vistas to the physical ed program.

And so the situation stood until

# A Schoolboy Fieldhouse with a Rubber Track!

By O. R. BARKDOLL

Educational Consultant, Downers Grove, Ill.



Ever see a high school indoor play area as resplendent as this? Everything but the maple basketball court in the background is surfaced with a rubber-composition. The track pole,

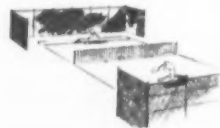
made of wood, is painted highway yellow; the area between the court and track is painted red, while the area from the pole to the wall is green—furnishing additional reflection of light.



In fact everyone concerned with school athletic programs should be informed about the products Stewart produces for playgrounds and gymnasiums. Here are a few:

#### BASEBALL BACKSTOPS

Sturdily built of Chain Link Wire, 20' wide, 12' high with 10' wings set at an angle on each side. 4' overhang at top.



#### CHAIN LINK WIRE FENCE

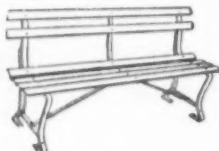
is made in several weights and heights, with or without arrangement for barbed wire at top. Style JTH illustrated.



**WIRE MESH PARTITIONS** for locker rooms, tool rooms, equipment storage, etc. Sectional. Fit any space. Easily and quickly erected.

#### No. 370 SETTEE

Built in 4', 5' and 6' lengths. Sturdy and attractive. Rust-resistant steel framework galvanized after fabrication. Wood slats painted moss green.



**FLAGPOLES** Made of full weight standard pipe, heavily galvanized after fabrication. Be sure to give desired height above ground line.

Then there are other products such as Iron Picket Fence, Skylight and Window Guards, Steel Folding Gates, Railings, Bicycle Racks, Stadium Seat Brackets, etc. Write for catalogs. Please mention products in which you are especially interested.

**THE STEWART IRON WORKS CO., INC.**  
2075 Stewart Block, Cincinnati 1, Ohio  
Exports in Metal Fabrications Since 1886



last spring, when Crystal Lake, Ill., came up with one of the most revolutionary ideas in the history of school building—a beautiful functional fieldhouse with a regular maple wood floor (for basketball and other activities) plus a large RUBBER composition area (for track and other activities)! In fact, everything but the basketball court is RUBBER surfaced!

The huge new fieldhouse stands out in bold relief to anybody approaching Crystal Lake on U. S. Route No. 14. It is 250 feet long and 110 feet wide. The entire north side of the building also serves as one wall for the four other new school units—shop, home economics, cafeteria, and music—a modern architectural concept which saves heat loss from expansive outside wall space and saves money on expensive faced brick construction.

The regulation maple-wood basketball court is 50' by 84' and is laid out just a bit east of center, enabling us to make more efficient use of the end areas. Two practice cross-courts, 42' by 70', are also available, and all courts are equipped with fan-shaped backstops.

The court was laid out first. First came a sub-base of 4" of concrete, then 2 x 3 wood stringers, next 1 1/4" plywood sheets, and finally the tongue-and-grooved maple wood.

The rest of the field house surface, as previously mentioned, is made up of a RUBBER composition. (Complete details will be given later on.) Running around the outside of the basketball court is a track 10' wide, 12 laps to the mile, with wooden 2 x 4's serving as the pole.

Inside the oval of the track are a pole vaulting and broad jumping pit, two volleyball courts, and two badminton courts. Outside the track, in opposite corners, are shot put and high jump areas.

As you may tell from the accompanying pictures, there's a lot of room between the basketball court and the track, and a lot more space all around the outside of the track proper.

Four balconies overhang the field house floor. These represent the maximum of functional efficiency, subscribing to the principles propounded by the author in the January 1947 issue of *Scholastic Coach*.

The dream of every coach who also teaches physical ed is not only to accommodate every fan for varsity games but to make daily use of all that waste space engendered by permanent bleachers.

Instead of building these costly, permanent bleachers, useless except for a dozen school functions a year,

**THE** following manufacturers supplied the major equipment items in the grandiose Crystal Lake (Ill.) Fieldhouse:

**Horn Brothers Co.—Folding Bleachers**  
**Fred Medart Products, Inc.—Basketball Backstops, Electric Scoreboard, Gym Apparatus**  
**Bailey & Himes, Inc.—Track Equipment**

and instead of installing an expensive "oblique stairway," it's much more sensible to build a cheaper vertical wall and a horizontal shelf. You may then install folding bleachers on this shelf—extending them for contests and folding them for physical ed classes.

By so doing, you can make 60% more floor space available for those large classes, decrease the total seating cost by 50% and seat 40% more spectators at contests!

On Crystal Lake's four balcony shelves, folding bleachers provide maximum seating for games (5,000), yet can be cleared away in a few minutes for physical ed classes. On the balcony shelf is ample room for 20 x 20 wrestling mats, climbing ropes, all types of ladders, traveling and flying rings, trampoline, low and high horizontal bars, parallel bars, side horse, springboard, teeter board, golf driving cage, and shuffleboard courts.

In the southeast corner (above the foyer) is room for seven table tennis tables. In the southwest corner under the balcony shelf is a large room for bulky storage and a smaller room for tools.

Several locker rooms are located in the basement below, namely: a 26 x 60 team locker room capable of holding two hundred 15 x 15 x 60 ventilated lockers, a 26 x 32 visiting team room containing twenty-eight 12 x 12 x 60 lockers, a towel room, and several coaches' rooms.

Below the cafeteria (which runs along the north wall) are located the dressing rooms for officials, the athletic director's office, the physical ed teachers' offices, a 10 x 14 physical therapy room, a 12 x 14 current issue equipment room, an 18 x 24 dead storage equipment room, and a physical ed locker room containing 365 12 x 12 box lockers with two 12 x 12 x 60 lockers available for every 15 box lockers.

Thus, every pupil taking physical ed has the use of a large locker for his street clothes. Progressive show-ers are controlled by the instructor.

(Concluded on page 64)

*Sealand* FIRST FAMILY OF SPORTS

Stars in your line-up!



THE PROFESSIONAL

Joseph T. Wood's finest baseball shoe... yellowback kangaroo featuring the astounding "Super-Comfort" construction... extra light copper-riveted spikes... in whole and half sizes from 5 to 13.

*Joseph T. Wood*

**BASEBALL SHOES**

*Springfield*

**BASEBALLS and SOFTBALLS**

TOP teams deserve Joseph T. Wood baseball shoes with built-in SUPER-COMFORT; Springfield balls of SUPER-CENTRIC construction.

SUPER-COMFORT includes the 9 outstanding advantages that make Joseph T. Wood baseball shoes flexible, lightweight, durable and perfect fitting. SUPER-COMFORT takes in 100% DuPont nylon stitching throughout — on both soles and uppers... Goodyear welt... cushioned heels... extra long tongue... scored shank and steel sole plate.

Springfield's exclusive SUPER-CENTRIC baseball construction is new... amazing! It gives teams perfect sphere balls with perfect balance plus 5 outstanding features: patented cork center... electronically wound... Elastomeric bonding... horsehide covers and over 100 double-needle hand stitches.

See Joseph T. Wood baseball shoes and Springfield balls and add 'em to your winning line-up.



OFFICIAL LEAGUE

has "Super-Centric" construction... amazing durability and shape-retention... water-repellent... scuff-resistant... patented cushioned cork center with rubber inner and outer cushions... dynamically balanced for true flight.

OFFICIAL AMERICAN FAST BALL LEAGUE

this superlative ball is "official" in the Amateur Softball Associations of Okla., Tex., Wisc., and many others. Hydral-temp-molding producing a stable, resilient center. Pearl chrome tanned horsehide covers 100% DuPont braided nylon stitching.



*Buy*

THE SPORTS BRAND MILLIONS DEMAND!





# Laying Out the Playground

**D**OES your town or neighborhood need a playground? Where should it be located? What size? What playground apparatus should be installed?

These vital questions are best answered through a careful study of the community. This survey should be made by a fact-finding committee, embracing representatives of the juvenile court, police, welfare and health departments, schools, safety council, and other agencies interested in the welfare of youth.

Its objectives should be: To determine the character, population distribution, traditions, interests,

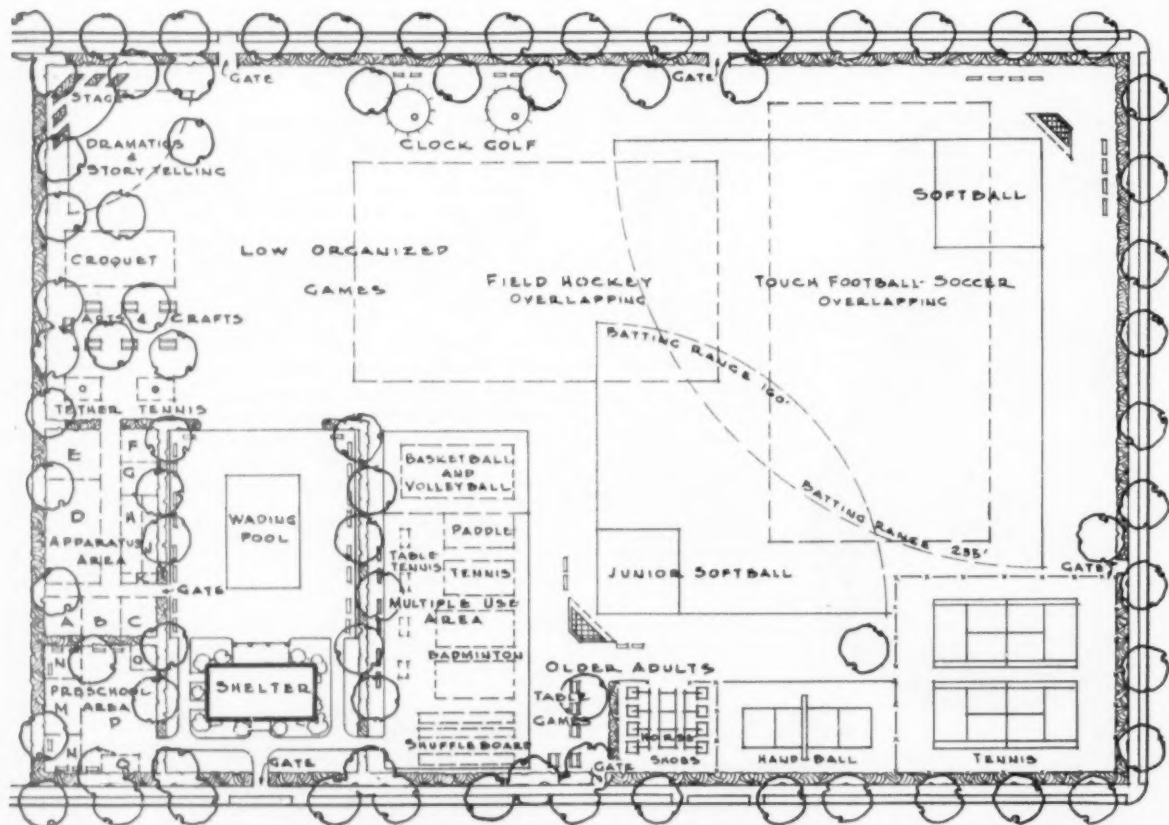
needs, problems, and resources of the community.

Here's a point to remember: In your campaign to enlist public support for the playground project, be careful to avoid using the words *bad, delinquent, and underprivileged* children in referring to the youth to be benefited. This is poor publicity when directed at a definite neighborhood and arouses antagonism.

Juvenile delinquency and poor health in crowded neighborhoods are important factors to consider. of course, but they're not the only arguments for playgrounds and

recreational facilities. Consideration must also be given to the over-all needs of the community's children. After all, recreation is a necessary element in *normal* community-life.

In making its survey, however, the fact-finding committee should weigh the important social factors. Social data might well include: Delinquency breakdown by age, sex, color, type of offense, time of day, season of year, and home addresses of delinquents; locations of highest disease rates; and a safety breakdown, covering street accidents to children by ages, types, causes, neighborhoods, time of year, day of



Prepared by the National Recreation Association for Recreation Magazine, this plan is typical of many potential playground areas in residential districts. Following is the key to the equipment: A, sand modeling; B, see-saws (set of four); C, jungle gym, castle tower, etc.; D, swings (set of six); E,

giant stripe or circular rings; F, box hockey; G, double horizontal bar; H, slide; J, horizontal ladder; K, balance beam; M, chair swings (set of eight); N, sand box; O, jr. jungle gym, etc.; P, paved area; Q, kindergarten slide. Complete enclosure is desirable both for safety and effective leadership.

# to STATE CHAMPIONSHIP PLAY-OFFS on HILLYARD-FINISHED FLOOR



## HILLYARD PRODUCTS

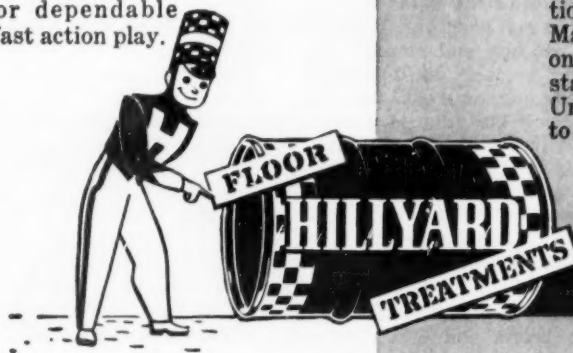
Specified by Architects  
Childs and Smith, Chicago,  
and used on floor,

- WOOD PRIMER
- STAR GYM and
- SUPER HIL-TONE  
dressing

16 wins! No losses! That's the record the basketball squad at Kankakee, Ill., H. S. stacked up before going to State finals. Hillyard-treated gym floor was training center and home floor for an important segment of the year's games.

## GIVE YOUR GYM HILLYARD'S FINISH FOR CHAMPIONS

Now in use on 15,000 of the nation's finest sports floors. When you plan with a Hillyard Maintaineer, you save labor time and costs... get long wear beauty for dependable fast action play.



### Coach Earl Jones Agrees

with hundreds of other leading High School, College and Professional coaches that the accurate shooting and fast pivoting which makes championship teams would not have been possible without the sure footing provided by a Hillyard non-skid, no-glare gym finish.

At Kankakee, Ill., Hillyard products were applied under the direction of Ellis Alldred, the Hillyard Maintaineer in the territory. He's one of 120 Hillyard Maintaineers stationed in key cities over the United States. There's one nearby to serve you.

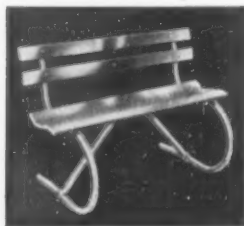
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## You'll like DOING BUSINESS WITH AMERICAN

Since 1911 the finest Park, Playground and Swimming Pool Equipment built, unsurpassed in strength, durability and safety, and backed by lifetime guarantee against defective materials and construction... low, nationally advertised prices which today average but little above pre-war 1941... highly personalized service on both your problems and orders... prompt, friendly adjustments to your complete satisfaction... these are just a few of many reasons we believe you'll enjoy doing business with AMERICAN.



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Official Regulation One-Meter Unit

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the week, and time of the day.

After you know your community or neighborhood, what's the next step? Here you might run into the twin problems of available space and financing.

Playground size should be planned according to the population of the area to be served. Here's a suggested table: For population of 1,000—2.75 acres; 2,000—3.25 acres; 3,000—4 acres; and 5,000—6 acres.

Another method of determining the proper size of the recreation area is based on the number of children in the neighborhood or community. A neighborhood with 200 children would need 2.3 acres; 450—3.05 acres; 600—3.5 acres; and 800—4.5 acres.

It's seldom practicable to conduct a fully developed playground in a neighborhood where the child population is less than 200. If there are more than 1,200, it's preferable to have two playgrounds. The modern trend is to make playgrounds as readily accessible as possible, eliminating the need for children traveling more than a half-mile.

Launching a community-wide recreation program calls for a careful evaluation of existing facilities. Adequate areas and facilities are prime essentials, and it's important to think in terms of mass use, though it's also well to promote specialized interests.

The National Recreation Association has set up playground standards for a five-acre site which provides a good starting point for a community of about 4,000 population.

Besides the primary, junior, and senior apparatus areas, a five-acre playground provides ample room for other recreational facilities and activities. Nearly half of the playground is devoted to team games such as basketball, softball, soccer, and field hockey.

Overlapping of the fields permits variations in the program from one season to another, and ample space is provided for one adult softball field for evening or week-end use.

The service building is located near the main entrance to the playground and near the center of control for the children's areas. In addition to the director's office, toilet, and storage facilities, the building provides an attractive room for indoor activities.

Adjoining the playground building is the crafts and quiet games area. Developed for quiet, small-group activities such as dramatics, story telling, and handicrafts, this section is removed from areas where large, noisy groups play.

A wading pool is placed close to the playground building to facilitate control and reduce construction cost. The pool is drained and used for games much of the year. An area adjoining the pool is used for shuffleboard and other games.

Adjoining the apparatus area is an open game area set aside primarily for the running, circle, and throwing games of young children. A multiple-use paved area, surfaced for all-weather use, serves for roller skating, dancing, or ice skating. In addition, badminton, shuffleboard, and other court games can be played.

One corner of the playground is devoted to informal games involving two or several participants, such as horseshoes and croquet. The horseshoe court is placed in a corner for safety reasons.

One end of the playground is used for a variety of court games. Two tennis courts are enclosed by a fence, as is the adult area providing the volleyball, paddle tennis, badminton, and shuffleboard courts.

The basketball and handball courts are chiefly used by boys and young men. But several of the courts farthest from the children's section are reserved primarily for adults.

In a corner, adjoining the adult courts, are provided tables and benches where adults may sit in the shade and play cards and other table games. Playgrounds should be made attractive as well as functional by planting trees and incorporating other landscape work.

### BASIC EQUIPMENT

What devices should be purchased when establishing a new playground apparatus area? This depends upon how much you have to spend, the number of children to be served, and the amount of space available. Swings, slides, see-saws and climbing structures are basic units, of course.

Later on, when additional funds become available, the apparatus area can be made more intriguing and varied by adding giant strides, ocean waves, flying rings, horizontal ladders, parallel and trapeze bars. The latter four units are ideal for the older children, particularly those who've reached the awkward stage and need exercise that will develop coordination and skill.

"Playground planning is neither an exact science nor a highly intricate problem that can be solved only by expert engineers or technicians," says Norman R. Miller, vice president.  
(Concluded on page 53)



## USE THE SUPPORTERS WORN BY CHAMPIONS



Weigh these important advantages of Johnson & Johnson TRUMP V-FRONT Supporters for your teams:

- 1. They're comfortable:** The V-FRONT construction won't slip, the leg straps won't curl.
- 2. They're economical:** The oversize pouch provides for shrinkage. Permoflex webbing assures longer life.
- 3. They're being used and endorsed by the World's Champion New York Yankees** for the seventh straight season. What a testimonial!

Examine the complete line of Johnson & Johnson Supporters. Winners all—you need them on your winning teams.

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## NURRE All-Glass BANKS



**... official for high school,  
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● It's official! All Nurre Glass Banks are fully approved by the National Basketball Committee... not to mention enthusiastic players, coaches, and spectators!

Nurre Banks are guaranteed against breakage in normal use. And here's one for the record books: in 30 years, no Nurre Bank has ever been broken in play!

In addition to the rectangular and fan-shaped banks shown here, Nurre offers a low-cost, rectangular model with 12" wood panel extending across bottom.

Order goals from Nurre, too. Specify type of bank—all-glass or with wood strip.

Get full information. Send for *free*, illustrated booklet today. Write:

**THE NURRE COMPANIES, INC.**

Dept. SC-113, Bloomington, Ind.

Makers of Glass Banks since 1934

By **ED J. LAURENSEN**  
*John Muir Jr. College, Pasadena, Calif.*

## Call for RUBBER!

**W**HILE the price of athletic equipment—like everything else—has almost doubled in the past 13 years, our college, among others, has been able to maintain the physical education ratio of a dollar per student.

(In 1940, our physical education equipment cost us about \$1 per student. Today, after 13 years of rising prices, we spend approximately \$2,300 on 2,100 students—even though our current requirements exceed those of the 1940's due to increased activity in athletics, especially in such sports as tennis, golf, and badminton.)

The reason, as far as I'm concerned, is obvious. I attribute it directly to the development of rubber and rubber-covered athletic equipment. This has resulted in products which outlast other types from three to six times, thereby achieving tremendous dollar savings without sacrificing performance, quality, or quantity.

Only seven years ago, we were using only leather equipment. Today, the pendulum has swung the other way—90% of our equipment, including that for interscholastic competition, consists of rubber and rubber-covered goods.

The remaining 10% are leather balls that are kept on hand in the event an opposing team objects to the use of rubber balls. And that only happens when we face non-conference foes; for our league, the Western State Conference, has officially adopted rubber-covered footballs and basketballs for game use.

Several things convinced me that the switch to rubber equipment was necessary. In the first place, I was convinced I could save money by so doing. Secondly, I felt the rubber balls would outwear the leather, which has been definitely shown to be true. And, thirdly, I was thoroughly convinced that the coaches and the players would be unable to tell the difference in performance.

There was considerable prejudice against the rubber-covered balls in the beginning. Having played with them in playgrounds, the players tended to think of them as toys and

felt that they, as varsity performers, now rated the leather ball. The coaches felt the same way, but since they had a large supply of leather balls on hand, I didn't press the issue.

However, after first convincing myself that it was virtually impossible to tell the difference, I brought a new rubber-covered football to the officials before one of our games and told them that it was the game ball.

After the contest, I asked our coach how the ball performed. He was surprised that I should ask. "The ball?" he said. "Why, it was all right. Why do you ask?" Then I told him it was rubber-covered. We've been using them ever since.

For those coaches and athletic directors who've never had any experience in purchasing rubber and rubber-covered athletic equipment, here are a few words of advice: Buy the best, the top grade produced by any manufacturer, even though it's for use in elementary or junior high schools. It'll save you money in the long run.

And make certain you buy the best ball for the use it'll be put to. For instance, some companies make a basketball for outdoor use which differs from the basketball produced for indoor play. Be sure to specify what type of ball you want and what it'll be used for.

The event which gave the rubber-covered football its biggest impetus occurred in 1951 when Georgia Tech and Louisiana State agreed to use the ball in their Southeastern Conference game. This marked the first time any ball other than leather had been used in a major college conference contest.

Schools across the country then began using the rubber-covered football in games. The ball proved so successful that at the conclusion of the 1951 season, the N.C.A.A. revised its rules to allow the use of the rubber-covered pigskin by mutual agreement of the opposing coaches. Similar action was taken by the National Federation of High School Athletic Associations and by

(Concluded on page 65)



**"When you control the ball  
you control the game  
—and the SEAMLESS 580  
makes the difference"**



*George L. Mikan*  
George L. Mikan,  
"Mr. Basketball", Minneapolis Lakers



**Exclusive Kolite Cover Makes the Difference** — The minute you pick up this ball your fingertips detect a truly new "feel". It is deep-pebbled Kolite, the hardest wearing, most sensitive cover used on modern day basketballs. Seamless 580 Basketballs, together with the entire Kolite Line of athletic balls, are constructed with torture-tested Butyl bladders, patented Kantleek valves, 100% Nylon winding for extra strength. They play better, cost less, last longer. Try them.

*"YES—the feel is in the cover"*

ATHLETIC GOODS DIVISION  
**THE SEAMLESS RUBBER COMPANY**  
NEW HAVEN 3, CONN., U. S. A.





**MINI-TRAMP:** Constructed of the same materials as the regular Nissen Trampoline, Mini-Tramp is a circular lightweight springboard 36" in diameter with an aerated woven-web bed secured with rubber shock cord. Manufactured by the Nissen Trampoline Co., it is adjustable to any angle and folds flat.



**TRAMPOLET:** Consists of rigid steel tubing frame approximately 2½' square, supported by four legs cushioned with rubber traction shoes. Manufactured by Larry Griswold, it possesses a woven-web bed suspended by exercise rubber cables. Adjustable legs permit changes in the angle of the bed.

# The Abbreviated Tramp

By **NEWT LOKEN**

*Gym Coach, University of Michigan*

**T**HE abbreviated trampoline is a recently invented piece of gymnastic equipment that's meeting with unanimous approval throughout the country. Commercially manufactured under the names of Trampolet and Mini-Tramp, its purpose is that of a springboard.

Mechanically speaking, it consists of a rigid steel tubing frame supported by four legs and cushioned with rubber traction shoes which will grip the smoothest gym floor. The legs are adjustable so that the angle of the woven web bed may be changed to suit the performer.

The woven web bed is suspended by rubber cables. This provides a maximum bounce for the performer.

There are numerous ways in which the device may be employed. Since those using it are usually fairly skilled tumblers, divers, or trampolinists, there's no need to dwell on the exact details of the recommended stunts.

Before elaborating on these stunts, a few basic safety hints should be mentioned.

1. Progress slowly in learning the use of the apparatus. The first few attempts should merely consist of bouncing off to the feet. Practice the art of leaning forward or backward, depending on the stunt in mind.

2. The Trampolet or Mini-Tramp may be padded with mats for safety. This is especially effective when first trying stunts off it. Later, as skill is developed, the mats may be eliminated.

3. Use the safety belt in attempting somersaults for the first time.

4. Be sure the mechanical phases of the device are always in readiness, such as: all shock cords securely fastened, rubber pads on the legs secure, adjusting screws tightened, etc.

## USES FOR THE APPARATUS

The abbreviated trampoline may be employed as follows:

1. **Tumbling.** It is a fine device with which to assist the tumbler in executing his somersaults, etc. Some suggested stunts are:

*Over the low or back end:*

Straight bounce—pike position.

Back somersault—tuck, pike or layout position.

Handstand on high end, kick-down, cut away.

Handstand on high end, kick-down, back somersault.

Back somersault with half twist.

Back somersault with full twist.

*Over the high or front end:*

Straight bounce—pike position, layout with legs straddle.

Front somersault—tuck, pike and layout.

Barani.

Gainer.

Front somersault with full twist.

Though these tumbling stunts are generally executed in a gym onto mats, they're also great fun on a

sandy beach. This type of apparatus has been used a great deal at famous Santa Monica Beach in California.

2. **Cheerleading.** The apparatus is extremely valuable to a tumbling cheerleading squad. It aids tremendously in executing tumbling stunts in cheerleading routines. Because of its compactness, the miniature trampoline can be transported quite easily from game to game.

3. **Diving.** The device can be used quite effectively for diving practice. By using the overhead safety belt, many "dry-land" dives can be tried with comparative ease. It can also be used as a substitute for a diving board alongside a swimming pool or on a platform.

4. **Trampoline mounting.** Trampoline performers can use the device as a means of mounting onto the trampoline. In exhibitions, this method of mounting is particularly effective. Some of these mounts are:

Swan dive to a front drop.

Swan dive over to a back drop.

High bounce to a feet bouncing position—with half, full twist.

High bounce to a seat drop.

High bounce with a half twist to a back drop.

Back pullover out of the previous stunt.

Front somersault.

Barani.

Front 1¼ somersault to a front drop.

Front 1¼ somersault with a half

(Concluded on page 72)



# Your Needs Created The Most Modern TRAMPOLINE

## *That's Why* **NISSEN** *Brings You* **MODEL "77" Now**

NISSEN REMAINS pre-eminently "First Name in Trampolining," because Nissen created the modern Trampoline and has engineered its progress through a series of ever-improving models. Nissen's knowledge of the Trampoline user's and coach's needs is built right into New Model "77." ASK ANY OF THE THOUSANDS who have coached, participated or competed in Trampolining. Educators, students, recreationists, training officers and spectators join in enthusiasm for the bouncing sport founded by Nissen, champion and pioneer.

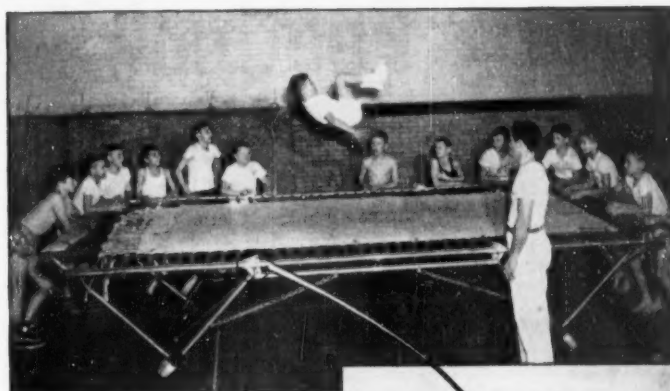
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Available at Once  
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**MINI-TRAMP**  
"The Modern Springboard"  
for Gym or Pool

NISSEN "WEB WING"

**WEB BEDS**  
Official for All  
Trampoline Competition



### NISSEN'S Novel Built-In "HIDDEN HINGE"

● Produces endless UNI-TUBE Trampoline frame. No upthrusts remain.

### PROJECTIONS ELIMINATED

● Side and end pads form larger unencumbered working surface. Pads fold compactly in place. No removals required.

### NO PINCHING

● Study these three pictures from the New "77." Compare with inset drawings and you'll realize why the NEW

STREAMLINED AND SIMPLIFIED

## NISSEN "77" TRAMPOLINE\*

Signifies the most advanced step in NISSEN's almost 15 years of designing and building ever-better Trampolines. Nissen craftsmen concentrate on TRAMPOLINES EXCLUSIVELY for schools, colleges, Y's, armed forces, clubs and centers. It's a new "FLASHFOLD" Model. Folds faster and more easily.

# NISSEN TRAMPOLINE COMPANY

200 A AVENUE N.W.

\*Reg. U.S. Pat. Off.

CEDAR RAPIDS, IOWA

*The author himself shooting a high school contest from atop the roof of Roosevelt Stadium (Jersey City).*

# Filming Football in Slow Motion



**M**ORE and more schoolboy football coaches are becoming interested in filming their games in slow motion. College and pro teams have been doing it for years. Indeed, game movies have become priceless, indispensable parts of their coaching scheme.

Since the entire game is recorded, every play becomes available for endless review and study. The film is pitiless. Nothing escapes it. Every mistake is exposed in stark detail, and no alibis can be offered for a missed block, poor faking, or any other failure in offensive assignment.

The defense is also shown, including the overall alignments and the individual execution—revealing which players are charging, sliding, slanting, looping, or just goldbricking.

Another advantage of game movies is their carry-over scouting value from year to year. Though coaches may put in a few changes now and then, they generally stick to the same offense. Hence, before playing them, you can study the movies of last year's game. You might also exhibit the film to your squad to give them an idea of how their next opponent will look.

Camera addicts might well turn their hobby into a profitable weekend venture—the way I've done. Last Columbus Day week-end, for example, I shot five ball games which netted me \$115. Not bad for a few hours work!

It all started at the beginning of the season when the high school coach asked me whether I could film a game with my Keystone 16-mm. camera and 3-inch telephoto lens.

I told him I could. But there was one problem. It was impossible to shoot the entire game with one camera. After a roll of film has been exposed, it takes time to reload the

camera, with the result that several plays are missed. To fully cover the game, you need two cameras.

Wanting full coverage, the athletic association purchased another camera (a Bolex), 3-inch lens, and tripod. (It was understood that I could always borrow this equipment for outside use.) Later, a 2-inch lens was added to my equipment to get a larger view of the field on kick-offs and punts.

Now for the details involved in the actual shooting. The equipment should be set up on the roof of the stadium near the 50-yard line, with the sun behind the camera if at all possible. While the sun may not cause too much trouble at the start of the game, it can cause light streaks on the film later on.

On the few occasions when you must film a game with the camera pointed toward the sun, a lens shield must be used for protection during the second half.

A continuous check of light conditions must be made during the game. There may be a bright sun at the start of the game and much less light later in the afternoon. As the light fades, the camera lens must be changed and opened up (made larger).

Slow motion movies are filmed at 32 frames a second and then projected at 16 frames a second. The advantage of this lies in the magnification of time—each play remains on the screen twice as long as it did on the field. As you can see, the light meter becomes an invaluable instrument when photographing the action so rapidly.

Night games sometimes pose a

problem in that some fields don't have enough candle-power for movie-making in slow motion. A light meter reading is necessary to determine whether there's enough light in the stadium.

The recent development of Du Pont's Kin-O-Lux, Gold Seal film, which has a Weston rating of 225, has proved a boon to nighttime movies. This film and an f 1.5 lens assure good results.

Filming football for coaching purposes is somewhat different from shooting for TV or newsreel consumption. In the latter, the cameraman must follow the ball-carrier. The coach, on the other hand, is more interested in other things.

Before the game, for example, he may instruct the cameraman to stress certain points. On pass plays, he may want to focus on the protection given the passer; while on defense he may want the operator to focus on his linemen charging the passer or on his secondary covering the opposing ends and backs going downfield for the pass.

Insofar as kicking situations are concerned, it's up to the coach to decide whether to concentrate on the protection given the kicker or on the ends and linemen going down under the kicks. It's impossible to follow both these actions with a 2- or 3-inch lens.

With the client team on defense in a kick situation, the camera should concentrate on the defensive line rather than the opponents' offense. *Caution:* Never follow the ball in flight. While a TV announcer may drool over a beautiful spiral as the camera follows the ball, coaches may want to see the men executing their assignments.

The cameraman should also be alerted to catch the defensive signals. These are given by the defen-

**By HAROLD HAINFELD**

*Roosevelt School, Union City, N. J.*

New  
1954  
**MacGregor**  
BASEBALL  
SHOES



*Judge for yourself  
see the new '54 models soon*



New MacGregor baseball shoes for 1954 are the greatest ever produced in MacGregor's 79-year history! Built for solid comfort, they deliver outstanding all-around performance.

Every shoe bearing the MacGregor name is made in MacGregor's own plant by athletic shoe specialists. That's why—over the years—players, coaches and managers have learned to trust the high quality and fine craftsmanship in MacGregor's complete line of baseball shoes.



"The Choice of Those Who Play the Game"

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The sizes  
go by  
the color  
in the  
toe



| Sock Size | Thread Color |
|-----------|--------------|
| 9         | Black        |
| 10        | Green        |
| 11        | Red          |
| 12        | Blue         |
| 13        | Orange       |

Whatever you want—  
wear Wigwams.  
All materials—  
all weights—  
all prices.

 Soft, springy, absorbent Wigwams, nylon reinforced, provide the all-important foot comfort needed for top performance. And—Wigwams are STA-SIZED\* to retain that comfort... no binding, bunching or chafing. Order Wigwams... at leading dealers everywhere. \*Won't shrink below the knitted size.

Hand Knit Hosiery Co.  
Sheboygan, Wisconsin



sive captain while the offensive team is huddling. He then turns to the bench so that the coach can also discern the defense called for. When caught on film, these signals enable the coach to check on the execution of the defensive assignments.

Experience has shown that high school games, with 12-minute quarters, can be covered in 800 or 900 feet of film. When the athletic director, principal, or band director wants shots of the cheerleaders, majorettes, and the band in action, another 100 or 200 feet may be needed.

The cost of the film can be a factor in many schools' decision to film their games. Let's see what it comes to. I shot 18 games last season, using a total of 144 rolls of film. Ordinarily, the film would have cost the individual school \$5.90 per 100 foot roll. For my bulk order, however, the manufacturer allowed me a discount of 80¢ per roll. Each roll thus came to \$5.10. (This includes processing and developing.)

The saving was passed on to the schools, with the result that one school was able to film an additional four games.

Following is the breakdown of the actual cost of filming a game:

|                               |             |
|-------------------------------|-------------|
| 8 reels @ \$5.10              | \$40.80     |
| 2 400' retake reels @ 36¢     | .72         |
| 2 400' cans for film @ 36¢    | .72         |
|                               | <hr/> 42.24 |
| Operator's fee to home school | 15.00       |
| Operator's fee to others      | 25.00       |

Usually there's some film left in the camera. Rather than shoot it out on spectators or other unimportant objects, the excess film is saved for titles. These include the teams playing, the date of the game, and the score by quarters.

These titles are shot after the game is over, appearing at the end of the film. They are then spliced into place at the beginning of the film and after each quarter.

Once the film is processed and developed, it is turned over to the coach. I get to see it the next Friday to check exposure and study my filming technique. Under no circumstances does the coach of one school see the film of another school. Each gets his film directly after the game.

Our proximity to New York City assures rapid developing service. Friday night game films are returned to the coach on Saturday, Saturday films are delivered on Sunday morning, and Sunday films are ready by Monday noon.

To expedite the rapid screening of football films, a special service

is maintained by the Eastman Kodak Company throughout its processing stations.

Through this special service, one-day processing is available for all motion pictures bearing the Kodak "Sports Film" label, supplied exclusively to coaches.

During the football season, the processing stations operate all day Sunday on the films of Saturday's games. Black-and-white films received before noon on Sunday are en route back to the coach before midnight processed, spliced in the sequence indicated by the coach himself, and assembled on 400-foot reels for uninterrupted projection.

Kodachrome film requires somewhat longer, but even Kodachrome motion pictures received by noon on a typical fall Sunday will be on their way back within 24 hours.

The actual delivery of the films depends, of course, upon the time required for transportation from the site of the game to the processing station and then to the coach's office. This is partly a matter of distance and even more a matter of train and plane schedules.

Seven Kodak processing stations provide a coast-to-coast network. The West Coast and Mountain Region are serviced by stations in San Francisco and Hollywood; the Midwest by the Chicago station; the East by those at Flushing, L. I., and Rochester; the South by the Washington processing lab; and the Southwest by a station at Dallas.

Arrangements for one-day processing service are easily made through the nearest processing station prior to the season's start, and special "Sports Film" labels may be ordered through these stations.

These labels, a distinctive orange and black, enable the processing personnel quickly to select football or other coaching films from the thousands of motion-picture cartons that the laboratory receives every day. Only through this special marking can the coaching films be routed for special service at the station.

Once the labels are ordered, the coaching staff should contact its nearest postal authority, bus line, or air or railway express agency, to determine the fastest possible schedule to a and from the processing station.

Comparative schedules should be worked out, and arrangements may be made to pick up the film on arrival, without awaiting delivery. Special plans should be made regarding the games played away from home.

The care with which such ar-  
(Concluded on page 51)





Monte Irvin, brilliant New York Giant outfielder, credits Niagara in helping to prevent muscular atrophy while recuperating from the badly broken ankle he incurred in 1952 training.



Howard Waite of the Pitt Panthers finds he can supervise several massages at once through use of a battery of Niagara units.



Ralph Kiner knows the value of conditioning and proves it by using Niagara before and after playing.



Chuck Mather, Massillon (Ohio) football coach, has been an advocate of Niagara Massage as a conditioning aid for several years.

## Here's What The EXPERTS Say About Niagara Deep Massage



**"It promotes faster healing of fractures, sprains, charley horses—helps avoid tension, stiffness—helps prevent muscular atrophy after injury."**

... That's what the experts say about Niagara Deep Massage. They say, also, that it is unsurpassed in the manipulation of skin, tissues and muscles. They rate it highly effective in helping to overcome injury-caused circulatory deficiencies and cartilaginous or bony overgrowths.

Dr. Harrison J. Weaver, physician to the perennially first division St. Louis Cardinals, reports especially good results in the use of Niagara as an aid in the healing of fractures and certain minor, but painful and incapacitating, spinal injuries.

Howard Waite, Athletic Trainer for University of Pittsburgh, uses Niagara for the renaissance Pitt Panthers. "Niagara occupies an important place in my preparations for this tough one-platoon football," says Waite. "It's truly DEEP massage. It has unequalled value in helping to restore vital circulation to injured parts and aiding in the prevention of muscular atrophy."

Sam Kramer of Strong Vincent High School is representative of progressive high school coaches all over America who've made Niagara Massage part of their program for safeguarding young athletes. One example of Niagara's effectiveness especially impressed Coach Kramer. "A back had been plagued with a sore leg since August," he writes. "He could play less than half of every game. Niagara helped clear up his ailment. He was able to play his first game after

using your equipment."

Ralph Kiner takes conditioning seriously. That's why he became so enthusiastic about Niagara when introduced to it two years ago. That's why regular use of Niagara is now part of his pre- and post-game conditioning regimen.

Monte Irvin, the hard driving competitive outfielder of the New York Giants, suffered a broken ankle during the 1952 training season. Because Monte was in his 30's, many sports writers thought it meant the end to his career. His own tremendous determination to play again confounded them. We're proud that Monte credits Niagara DEEP Massage with a big assist in his return to professional baseball.

Chuck Mather coaches at Massillon High School. No one needs be reminded that Massillon is always at the top in high school football. Chuck Mather has used Niagara equipment for 3 years. He has conducted numerous experiments on Niagara's effectiveness against sprains, strains, cramps, contusions, muscular atrophy. The results? Coach Mather is sold on Niagara—recommends it to other coaches!

We're proud to present these endorsements from men whose business and pleasure it is to know athletics. In every field of athletic endeavor, condition-conscious trainers and coaches endorse and use Niagara Deep Massage. For full details, write to Niagara today!

**NIAGARA MASSAGE • ADAMSVILLE, PA.**

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### Reverse Weave SWEAT SUIT

- WON'T SHRINK in length!
- WON'T STRETCH in width!
- No shoulder seams to tear!



**NOW**, for the first time, you get sweat shirts and pants that won't shrink in length or stretch in width, despite repeated washing! The secret is Champion's "reverse weave" construction and double knit ribbed inset gussets that assure correct fit with freedom of movement. Already adopted as standard by Cornell, Ohio State, Duke, Wisconsin, Northwestern, Iowa, Oklahoma and many others.

#### SWEAT SHIRT

**RWSS** Double knit side gussets for full chest freedom. Seamless shoulders for extra strength, long wear. Silver gray, S-M-L. Order the size actually needed. **\$26.00 Doz.**

(With design, \$28.40 Doz.)

#### SWEAT PANTS

**RWTP** Double knit crotch and leg inset gussets for free movement. Elastic bottoms, drawstring waist. Silver gray, S-M-L. Order the size actually needed. **\$28.00 Doz.**

(With design, \$30.40 Doz.)

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## A Pro and Con Discussion

Issued by the National Federation

# Athletic Insurance

**S**INCE the Wisconsin Interscholastic Athletic Assn. originated injury insurance back in the early 1930's, much attention has been focused on this vital phase of athletic administration. There are many reasons why the state high school associations have interested themselves in this field.

For one thing, they feel that some type of coverage should be available for every high school student, particularly those engaged in strenuous activities such as contact sports. Though statistics indicate that football isn't as dangerous as riding a bicycle or riding in a souped-up jalopy, this doesn't change the fact that the athletic department has a moral obligation to help defray medical expenses for injuries sustained in school projects.

Another vital reason why state associations have become interested in athletic insurance stems from the feeling that some type of preventive program is essential and that the best incentive for such a program is furnished by the benefit and insurance plans. These plans have provided accurate data and have inspired regulations and training programs which have tended to make these activities safer.

With the need for athletic insurance so intense, it's extremely disturbing to find that the number of doubtful claims and abuses are increasing every year. The benefit plan was primarily designed to provide low-rate protection for hardship cases. And in the early years of insurance, everyone was interested in adhering to this philosophy.

As the plans became better established, however, too many individuals started yielding to the temptation to take more out of something than they put in and to the tendency to consider any organization such as an insurance company as fair game for exorbitant demands.

For example, minor bruises and cuts which were once merely problems in first aid are now magnified into "disfiguring" injuries requiring a doctor's care and extended treatment. These deviations from the original basic philosophy are not only morally deplorable but are working inequities in that they're reducing the benefits in cases where they are most needed.

Some recent developments are significant. In Utah, a low-rate benefit plan sponsored by the state association

reached a point where it was showing too much loss to warrant continuance. This year the state association is recommending that schools participate in an unsponsored insurance plan with a higher rate but more complete coverage. This plan is sponsored by a commercial company which drew up the schedule in cooperation with the Utah H. S. Assn.

Much the same thing happened in West Virginia, where doubts have arisen as to whether the loss incurred by the state assn.'s low-rate plan can be justified. A plan similar to that worked out in Utah will probably go into effect.

A recent Indiana state assn. bulletin indicates that the state assn. has, in cooperation with a commercial insurance company, sanctioned a plan which raises the premium on the co-operative policy on which the sponsoring company sustained considerable loss during the past year or two.

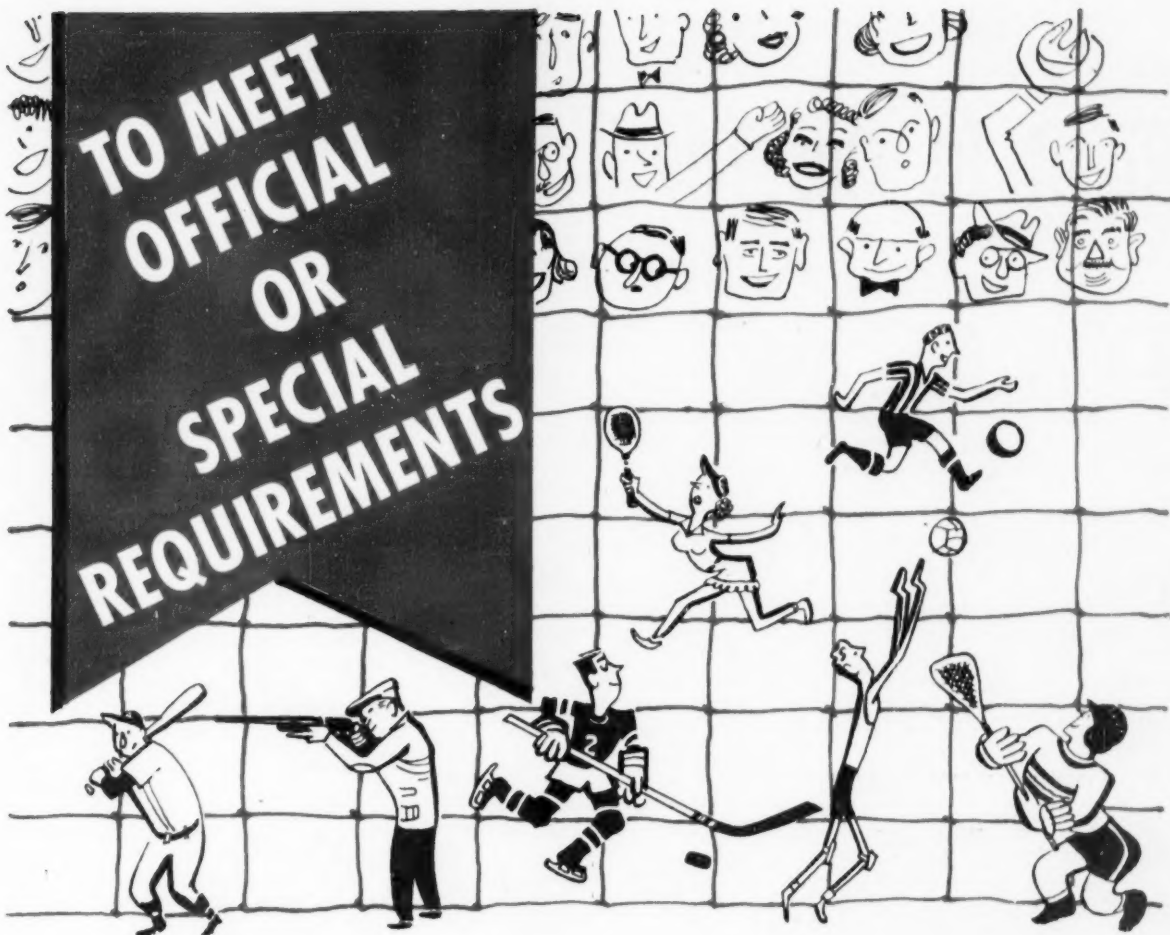
In explaining the need for this raise, it was pointed out that last year one group of 17 schools averaged more than one claim for every four students insured! Attention was also called to the frequent use of the X-ray for even the most minor of injuries.

Last year, the Minnesota State H. S. League suffered a \$16,000 loss on its benefit plan. Its budget for 1953-54 indicates that for the first time in many years, the League will show a deficit of approximately \$5,000 if the present benefit plan loss continues to increase at its present rate. For last year, \$2.28 per pupil was expended for each \$1.86 received in the form of premiums. And the cost does not include any allowance for overhead.

There is related activity in Iowa and Kentucky. The Iowa H.S.A.A. has announced that it will subsidize its insurance plan at the rate of \$1 for each athlete insured. This is half or more of the cost of the policy.

The Kentucky H.S.A.A. subsidizes its insurance plan in a different way. From profits derived from the association-sponsored basketball tournaments, an amount equal to about \$30 per school has been credited to each member high school which desires to insure a stated number of athletes. This results in each school automatically having coverage for a reasonably large squad of athletes without anything being paid by the school in the way of a policy fee.

(Concluded on page 49)



..... **TENNIS NETS\***  
 ..... **VOLLEY BALL AND BADMINTON**  
 ..... **GOAL NETS FOR BASKETBALL**  
 ..... **AND HOCKEY**  
 ..... **AND LACROSSE**  
 ..... **AND SOCCER**  
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 ..... **PROTECTIVE NETS**  
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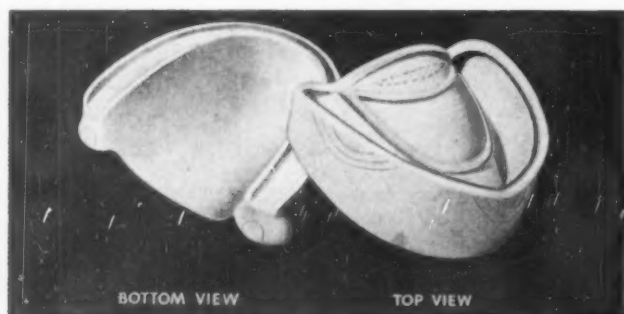


# Right in the Teeth

**E**VERY survey of football injuries accentuates the preponderance of facial injuries, particularly of the teeth. According to an official study made in Michigan, Minnesota, and Wisconsin, face and dental injuries accounted for 52.2% of all the injuries sustained in 1948.

That this tri-state survey hit the oblate spheroid right on the nose is proven by the national injury statistics published in the latest edition of the high school rules book. Here's the data concerning the most frequent injuries:

|                      |       |
|----------------------|-------|
| Head .....           | 9.7%  |
| Face and dental..... | 53.9% |
| Shoulder .....       | 13.7% |
| Knee .....           | 19.6% |
| Pelvic .....         | 3.7%  |



**MOUTH PROTECTOR:** W. J. Voit Rubber Corp.'s mouthpiece is made of wintergreen-flavored soft rubber shaped similar to full upper dentures so that it fits over upper teeth to form a protective covering. Held to mouth by suction to enable players to talk and breathe without removing guard. Once correct mouth size is determined, trim lines on protector act as guides in fitting it to individual.

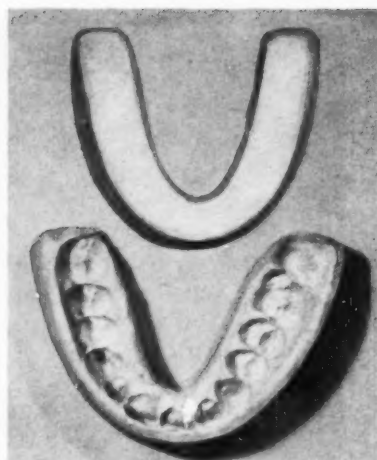
Insofar as the college game is concerned, the picture remains constant. Remember those famous pictures in *Life* last year showing all those Notre Dame players with missing teeth? This was far from an isolated instance. A survey covering 62 colleges revealed that approximately 4,000 players lost, broke, or chipped a total of 733 teeth!

These dental injuries present an acute problem. Broken bones will knit, sprains and bruises will mend, but a broken or knocked-out tooth means artificial replacement with the additional possibility of expensive future complications.

Furthermore, most athletic insurance coverage provides only limited coverage for damaged teeth, with the result that parents often have to assume a great part of the financial burden.

At any rate, statistics show that 38¢ out of every insurance dollar are being paid for dental claims.

**ODDOGARD**, product of Everlast Sporting Goods Mfg. Co., comes in two distinct pieces hinged together to open and close with mouth. Made of springy latex rubber, it completely encases both the gums and upper and lower teeth. It's curved to hug teeth, fits any size. Shock is absorbed, since teeth bite into soft rubber.



**FEATHERBITE**, manufactured by Williams-Huff Co., possesses a resilient rubber exterior curved to fit average mouth (top photo). It's heated in boiling water for two or three minutes to soften inner core, then pressed against upper teeth until complete impression is made (lower photo). It thus fits each individual tooth and locks around each tooth by elastic pressure. Cannot be knocked out of mouth, permits complete freedom of speech and breathing while being worn.

Disregarding all the inconvenience and suffering, this is a high price indeed to pay for a type of injury that could have been prevented by adequate mouth protection.

When scalp and skull wounds became extremely numerous years ago, the wearing of a protective helmet was made mandatory—and the result was virtual elimination of such wounds.

The rise in head injuries was met with the development of superior helmets. Shoulder, pelvic, and knee injuries have been combatted through constant experimentation with new types of materials and new pad designs.

More recently, a superb plastic mask has been perfected which provides full protection for the entire face. Simple in design and light in weight, this remarkable safeguard furnishes potent insurance against crippling face damage. Designed to fit all helmets, it allows full vision, ventilation, and breathing.

Definite progress has also been made in the prevention of dental injuries. Our sporting goods manufacturers have developed several excellent mouth protectors which are practically eliminating all dental injuries.

Illustrated on this page are the outstanding protective devices now in nation-wide use. High schools and colleges will do well to investigate their possibilities for all boys engaged in contact sports.



# COMPREHENSIVE PROTECTION FOR TEETH AND MOUTH

WHEN YOU ARE LOOKING FOR INSURANCE, YOU WANT THE BEST POSSIBLE PROTECTION TO FIT THE INDIVIDUAL NEEDS. WHEN YOU ARE LOOKING FOR COMPLETE PROTECTION FOR THE TEETH AND MOUTH ALL OF THESE REQUIREMENTS MUST BE MET:

- 1 It doesn't require adhesion to other parts of the mouth to stay around the teeth. IT IS FORM FITTING AROUND EACH TOOTH.
- 2 It isn't flimsy. IT IS STRONG ENOUGH TO ABSORB A BLOW TO THE TEETH WITHOUT INJURY, AND PLIABLE ENOUGH TO PROVIDE COMFORT. BOTH STRENGTH AND PLIABILITY REMAIN CONSTANT.
- 3 It doesn't require any of the teeth to be separated while being worn. IT PROVIDES A CUSHION TO ALL OF THE TEETH TO ABSORB A BLOW TO THE JAW OR MOUTH—THUS PROTECTS AGAINST CONCUSSION.
- 4 It doesn't have to be taken out when you want to breathe. IT PERMITS COMPLETE FREEDOM OF BREATHING.
- 5 It doesn't have to be taken out to permit the user to talk. IT PERMITS FREEDOM OF SPEECH WHILE BEING WORN.

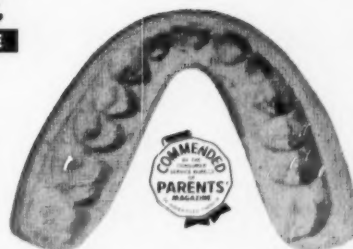
WHERE CAN ALL THESE GOOD QUALITIES BE FOUND?

## *Only in Featherbite*

IT COSTS LESS TO OUTFIT  
THE ENTIRE SQUAD THAN  
TO REPLACE ONE TOOTH.

*Materials and Workmanship Guaranteed*

YOUR TEAM DESERVES  
NO LESS THAN  
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Don't let a limited budget keep you from getting the BEST in sports trophies. The new REGAL line offers you substantial economies on every type of award...from personalized sports "Oscars" to impressive championship awards. Gold-inscribed plastic plates at 1/10th the cost of hand-engraving on metal! 5-day prepaid service!

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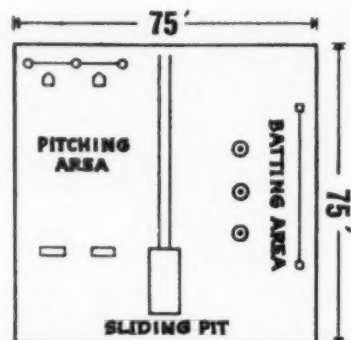
Title \_\_\_\_\_

School \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

# Baseball Practice Area



TRAINING AREA

By MICKEY McCONNELL, U. S. Rubber Co.

Coordinator of Youth Activities

**B**ASIC fundamentals are extremely important to baseball players since they serve the double purpose of forming correct habit patterns and eliminating the possibility of injury which might come from not knowing how to slide, throw or bat.

To give the boys good training conditions and facilities, I recommend the construction of a practice area approximately 70 feet square adjacent to the regular field. If such an area is not available, the training aids may be set up down the foul lines or scattered around the outside of the field.

The larger central area is recommended because it simplifies the problem of supervision and instruction by the managers and coaches. The facilities that will be described herein have been adequately tested by the Brooklyn Dodgers, Pittsburgh Pirates, Boston Braves, St. Louis Cardinals, and other professional, college, and high school officials, so that I have no hesitancy about recommending them to high schools.

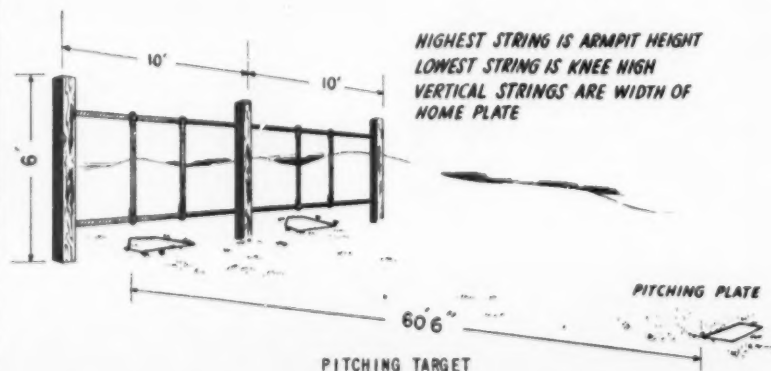
Of prime importance is a sliding

pit. A pit six feet wide and twelve feet long, filled with sand, should be adequate. The players should be taught to slide with their feet and arms up in the air and their eyes on the bag. To get into this position, it is necessary to land on the buttocks, where the body provides the most natural padding. Getting the arms and legs into the air prevents possible breaks, sprains, and chipped bones.

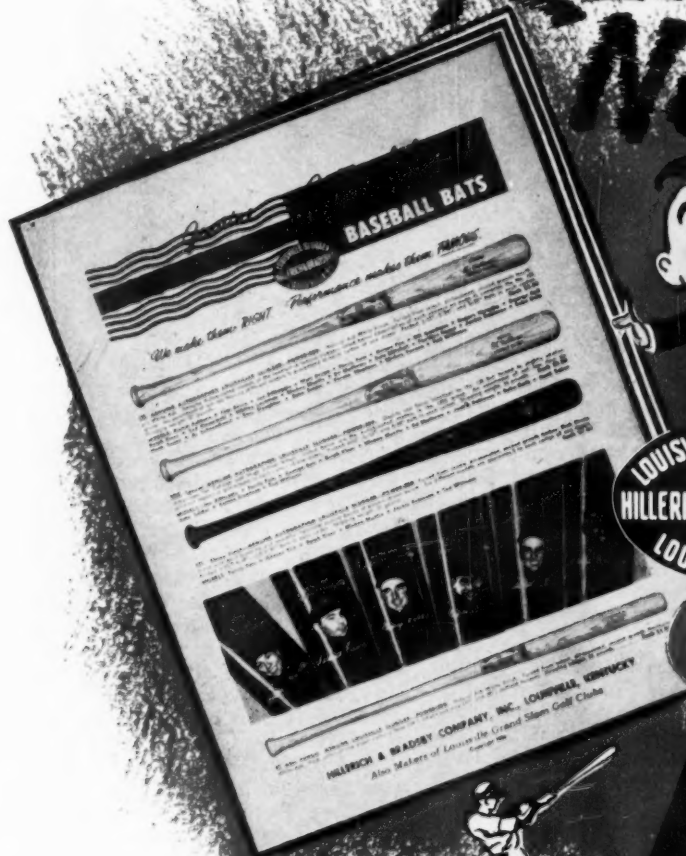
The boys should stay low when going into the slide and should always keep in mind that it isn't a jump, but a slide!

I suggest that every boy who is physically fit should spend some time in the sliding pit at every practice session. Once the player learns the desired position, he can work on the hook slide and other refinements.

The second practice area is for pitchers. This consists of a unique device known as "pitching strings." Introduced to professional baseball by Branch Rickey, they provide a target for a pitcher. Two strike zones are recommended. They are erected over home plates, which can



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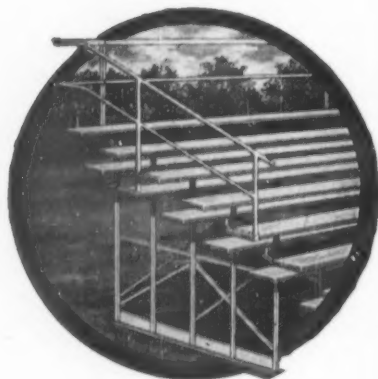
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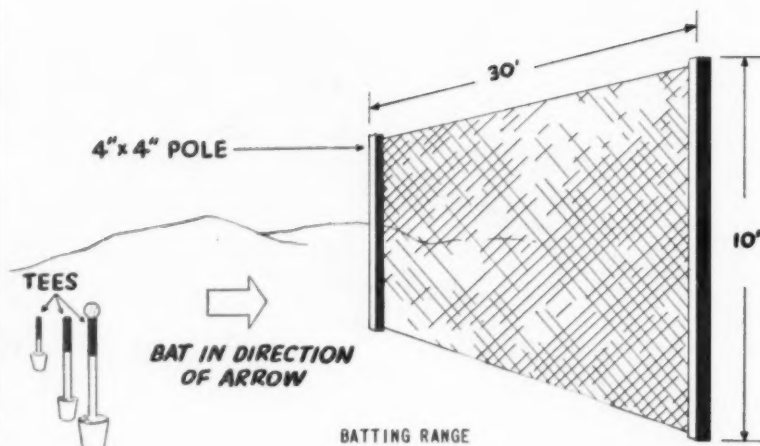


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be built of scrap lumber, painted white, and anchored to the ground with wooden pegs for this purpose.

Two-by-four poles can be stuck into the ground approximately ten feet apart with four-inch sides parallel to the pitcher's mounds. The poles should be lined up so that cords strung between them will be directly above the front of each home plate. One string should be at average knee-high level and the other string at average armpit height.

The strings should be of strong white cord similar to a carpenter's marking line, and can be obtained in hardware stores. Once the cross-strings have been stretched, up-and-down strings the width of each home plate should be strung between the cross-strings directly above the sides of the plate, to complete the strike zone.

Practice pitching mounds can be erected the proper distance (60' 6") from the strike zones, and practice pitching slabs can be built from scrap lumber, painted white, and anchored to the ground with wooden pegs.

When the practice pitching area is completed, pitchers can warm-up at regular intervals, using the strike zone for a target. This practice can be made more realistic by having a batter stand in the batter's box. In this way the batter has a chance to judge strikes and balls and become familiar with the pitched ball, and the pitcher gets used to pitching to a batter.

After a few sessions, the batter can start his swing and then pull back to get the practice of checking his swing when the pitch is bad. This is a good drill for the batter, but he should never go through with the swing. It would break the strings and might injure someone working on another assignment in the practice area.

The third section of the practice area is the batting tee range. A net or canvas can be strung between poles or buildings. The size of the area isn't too important, but an area from eight to ten feet high and thirty feet wide is recommended. This would take care of three batting tees and batters at one time.

By using a woolen practice ball, the batting tee area could be set up beside a building or any other barrier, eliminating the necessity of going a long distance to retrieve the batted ball. This ball will carry far enough in flight to determine whether the batter is hitting line drives, grounders, or high flies, and will eliminate the breaking of windows and other hazards of that nature. If no area is available, tees can be set up behind the regular field backstop and balls can be hit against the backstop.

The tees, which can be purchased ready made or built within the school, should be placed about ten to twelve feet from the barrier so that the batter can determine by the flight of the ball whether he's hitting on a line—which should be his aim—or hitting over or under it; and also whether he's hitting to the opposite field, pulling the ball, or hitting straight away.

Each of these aids can be constructed at very little cost, and should provide many more practice opportunities for every player.

Mickey McConnell is one of the most wholesome, decent gentlemen in sports. Former scouting director for the Brooklyn Dodgers, he now coordinates youth activities for the U. S. Rubber Co.—and big league baseball's loss has been young America's tremendous gain. His sound, progressive, sociological approach to athletics is beautifully reflected in the manner in which Little League baseball has blossomed in and around the New York area.





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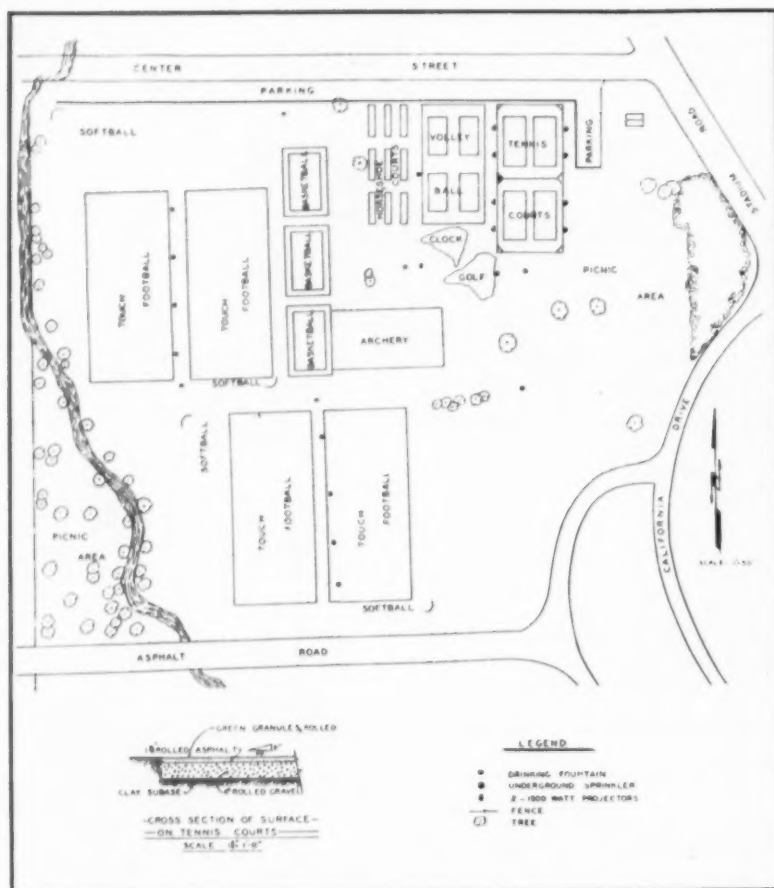
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Lay-out of the U. of Arkansas' unique outdoor recreation area.

## A 40-Acre Playfield

**T**HE University of Arkansas possesses probably the most unique and extensive outdoor recreation area in the country. Included in this huge 40-acre playfield are courts for tennis, horseshoes, badminton, volleyball, and basketball; an archery range; clock-golf greens; fields for touch football, soccer, and field hockey; and softball diamonds.

The gently rolling hills of the area provide a scenic terrain for the playfield which slopes into more rugged and wooded areas now being used as picnic grounds but which eventually will be developed into a nine-hole golf course.

The playfield originated five years ago as a "wild dream" in the mind

of Dr. Troy Hendricks, head of the department of physical education. At the time, the area had been utilized for temporary housing for men students. When it was made available to the physical education department, Dr. Hendricks immediately sketched his dream on paper.

The engineering staff of the physical plant department, under the direction of L. L. Browne, supervising engineer, drew the sketch to scale; and the development of the area became the responsibility of the physical plant department. To date, a large part of the original plan has been completed.

One of the features of the lay-out are four composition tennis

By **HOLLIS FAIT**

Phys Ed Dept., University of Arkansas

courts lighted for night playing. The lights are controlled by meters, into which the players feed coins!

There are also four composition courts for either badminton or volleyball, the standards being designed to accommodate either type net.

Three composition regulation basketball courts are also located on the playfield, as well as two clock-golf greens, six horseshoe courts, an archery range set against a natural elevation which accommodates eight targets, and areas which can be used for soccer, hockey, touch football, and softball.

Since the latter two sports require extensive playing areas but are played in different seasons, the same area is utilized for both by a clever portable goal post device designed by Dr. Hendricks.

The goal posts are inserted into cylinders buried in concrete in the ground. When the posts are removed, the cylinders are covered with rubber caps to prevent them from filling with dirt and from becoming obstructions to runners during the softball season.

The basketball hoops on the regulation sized courts are located the standard number of feet in from the boundary line. This is achieved by metal suspensions which project over the courts from posts outside the boundary lines.

This arrangement was especially designed by Dr. Hendricks to provide maximum safety for the players as well as to make the courts fit the regulation standards of indoor courts.

All the grassed area of the playfield has been seeded with Bermuda grass. The soil in the area is a clay loam with red and blue clay subsoil. Drinking fountains are located at strategic intervals so that no court is more than a few steps from a fountain.

The only undeveloped portion of the plan is the nine-hole golf course which is to lie in the rugged rolling section of the acreage. Fireplaces and tables will be added to the picnic areas in the near future.

Because the difference in elevation of the area was as much as 30 feet at some points, the playing areas were arranged to take advantage of the original ground level and thus eliminate much of the grade preparation work.

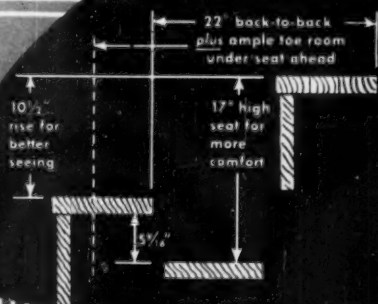
The sports which required the largest playing areas were located in the sections which had the least obstructions and irregularities; those

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requiring smaller areas were arranged where the grade was more steep.

All hard-surface court areas were rough graded to a reasonable level with a bulldozer. After this grading was completed, a four-inch to six-inch layer of bank gravel was spread over the surface and allowed to stand during the winter months.

When the temperature permitted (the following spring), the gravel was regraded to fill in a few low spots which had become evident during the winter months. After this grading, the gravel was rolled with a ten-ton roller until the desired uniform grade was obtained.

On the packed gravel was placed one and one-fourth inch of hot-mix cold-laid asphalt-coated gravel using a half inch minus gravel size. This coated gravel, which was prepared according to Arkansas State Highway Department specifications, was dumped on the field and spread with a grader to the most uniform grade obtainable with such a machine.

After this spreading, the area was rolled. By checking the grades with an instrument, it was possible to fill in all low spots and obtain the desired finished grade. About five weeks' time was allowed for the curing of the asphalt-coated gravel before any finish was applied to the surface.

The finish on the tennis courts served as a sealer and was obtained by first brushing on an emulsified asphalt material which had been diluted 50% with water. To this diluted mixture was added enough sand to fill all the small cracks and honeycomb conditions on the court surface.

This diluted mixture penetrated well into the asphalt-coated gravel and also cured rapidly in hot sunshine.

After the curing period, the surface was rolled with a 300-pound roller. Care was taken to leave a smooth surface. The second coat of sealer was then brushed on, using an undiluted emulsified asphalt material. Immediately after this application, green granite granules were spread and rolled in with the 300-pound roller to give a smooth green surface to the tennis court area.

To obtain the lines on the courts, their locations were determined and masked with one-inch by four-inch lumber. These masked lines were painted with full strength emulsified asphalt, followed immediately by the spreading of white grit—the kind used by poultry farmers known as the "baby chick" size.

About one day after the application of this grit, the masking lumber

was removed and the lines were rolled with the 300-pound roller. These operations left clear, well-defined lines.

The approximate cost of materials used in hard-surfacing the four tennis courts was 12¢ per square foot. As indicated in the foregoing paragraphs, these materials included bank gravel, asphalt-coated gravel, emulsified asphalt, and green granite granules.

The playfield is used for intramural as well as non-directed recreational play. Since Arkansas is favored with a mild climate, students at the University have ample opportunity to play a variety of outdoor sports during a large part of the year.



## SAFETY-CUSHION CRASHPAD

**H**ARD gym wall surfaces such as wood, plaster, tile or masonry present no hazard when paneled with Spongex Safety-Cushion Wainscoting. Manufactured by The Sponge Rubber Products Co., this wainscoting consists of  $\frac{3}{8}$ " plywood panels, each 2' x 6', covered by a  $\frac{5}{8}$ " layer of rubberized animal hair and a  $\frac{3}{4}$ " layer of soft cellular rubber sponge.

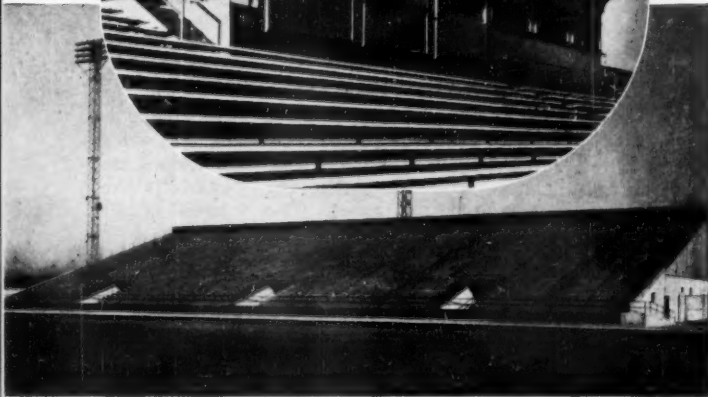
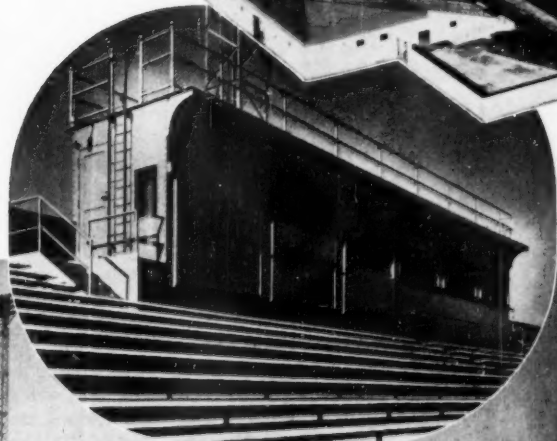
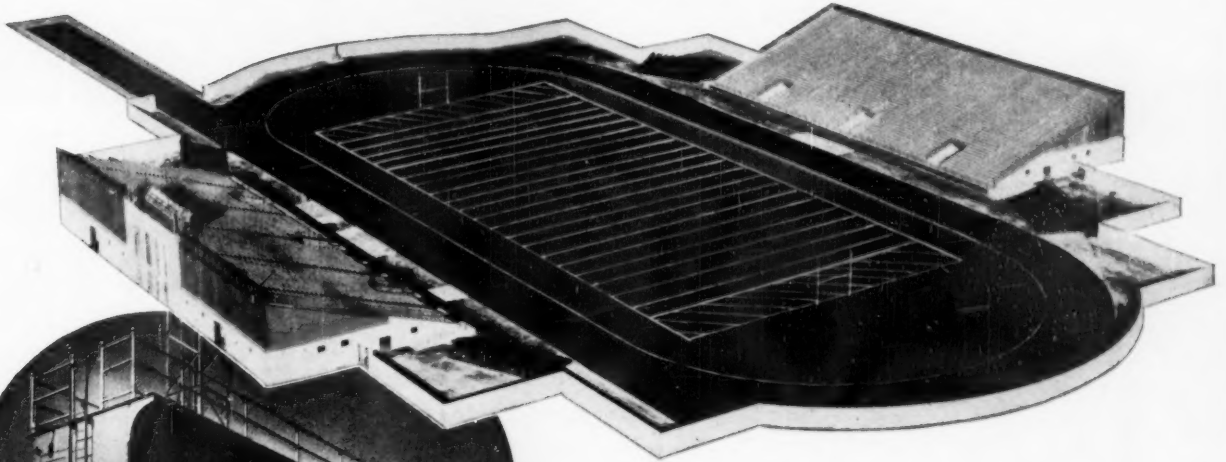
The assembly is about 1 $\frac{1}{2}$ " thick and is covered with flame resistant vinyl coated cotton textile. The sheeting is stapled to the plywood backing. Furring and installation of the panels and moulding are included in the general contract by the contractor with supervision by the supplier. The panels come in chartreuse, dark green, gray, blue, tan, or beige.

This superb crash-pad provides perfect insurance against crippling accidents in basketball (particularly where the end lines are close to the walls) and in all active physical education games.

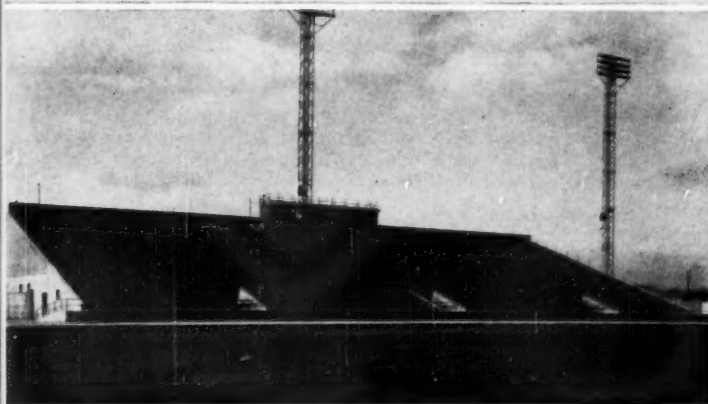


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# Designing the

# Football and Baseball Fields



Laying out a gridiron without using engineering tools.

IT IS generally agreed that grassed fields provide the best surface for the usual outdoor games. There are many strains of grasses, and the selection of the strain or combination of strains depends upon climatic and soil conditions.

In this connection a desirable procedure includes a soil analysis and recommendation by the state Agricultural Experiment Station of the grass strain or strains best suited to a specific locality. Farm county agents also may help in solving turf problems. These agencies render expert advice on the proper times for seeding and fertilizing these areas. In general, sodding is preferable to seeding, but the former is more expensive.

Where turf cannot be grown without difficulty, or where the usage of the area is so intense as to make maintenance costs prohibitive, natural soils may be utilized for playing surfaces. These soils may be improved as playing surfaces by mixing with proper proportions of sand, clay, and humus.

The use of calcium chloride helps alleviate the problem of dust. This material prevents the formation of dust and has properties for attracting moisture from the air which keeps the surface in a slightly damp condition.

In sections of the country where the soil is primarily clay, playing areas often become extremely hard in dry weather and muddy after rain. The following procedure may serve as a partial remedy for these conditions and creates better playing areas:

Loosen the field by disking. Procure grass roots that flourish well in the particular locality; chop these

By **GEORGE E. SHEPARD**  
and **RICHARD E. JAMERSON**

roots so that there's at least one joint on each piece (a sprig of grass will come up from each joint). Sprinkle these roots over the field. Prepare a mixture of topsoil consisting of two-thirds sandy soil and one-third old sawdust, the older the better. Apply this topsoil to the field at least 3 inches deep, drag to a level finish, and then pack firmly by rolling. Let the field remain idle for at least 60 days after this operation. This should result in a grassy area that drains well.

Grass fields should be mowed frequently. During the off season, the mower should be set about 1 inch from the ground; during the playing season about 2 inches from the ground. If the field is mowed frequently, the cuttings need not be removed. However, if the grass be-

comes too high before mowing, the cuttings should be removed because they'll smother or scald the grass.

Constant watering may cause the soil to become sour, thus preventing the chemical action by which food elements are made available for the plant. During normal weather, very little sprinkling is necessary. Frequent light sprinklings bring roots to the surface where they may be killed by the sun.

Thorough soaking at intervals is better; one good soaking per week usually is sufficient. This causes the grass to root deeply, which is the desired result. The subsoil rather than the topsoil must be well saturated with moisture.

Fertilizer should be applied before the seed is sown, or after the grass has attained some maturity and is not too tender. At least two applications of fertilizer per year are desirable, one in the spring and another in the early fall.

To maintain the green appearance of grassed fields during the fall months, it is a common practice to sow Italian rye in September.

## THE FOOTBALL FIELD

The selection of a site for the football field demands consideration of such factors as orientation of the field; drainage, grading, and surfacing; and provisions for spectator seating, parking of cars, and possible future expansion.

**Orientation.** It's not always possible to orient the football field according to accepted standards, because of topography and general slope of the available area. However, every effort should be made to give first consideration to the participants.

This consideration indicates that the long axis of the field should be in a north-south direction so that the late

*THIS article is reprinted from Chapter 6 (Facilities) of Shepard and Jamerson's superb text, **Inter-scholastic Athletics**, published by the McGraw-Hill Book Co., \$4. Offering a splendid blending of sound educational principles with practical administrative procedures, the book is sound, thorough, and extremely useful. A detailed review of it appeared on page 82 of the September issue of **Scholastic Coach**. It is recommended for coaches, physical education personnel, superintendents, and principals.*

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afternoon sun rays will fall at approximately right angles to the long axis of the field.

**Drainage.** Surface drainage is accomplished by grading the area so that the consequent slope will remove surplus water by gravity. Sloping should be within the limit of 1 to 3 per cent. Sloping less than 1 per cent seldom proves effective; sloping above 3 per cent may result in erosion.

For surface drainage of football fields, the crown of the field is established down the center of its long axis, about 12 to 14 inches above the side lines. Surface water will then drain toward both sides of the field to be carried away by a series of catch basins.

These catch basins should be spaced at 50-foot intervals, and connected by tile lines not less than 6 inches in diameter that lead into the storm drain. Catch basins should be located at least 30 feet from the side lines.

Unless the soil is very porous, the football field may require subsoil drainage. This can be accomplished by laying 4 to 6 inch drain tile below the frost line, in either a herringbone pattern or across the short axis of the field, on 25 to 50 foot centers. These drains are connected with mains located on each side of the field.

Where football fields are located inside the track oval, subsoil drains for both the football field and track usually are connected.

**Surfacing.** Turf areas are best for football fields. Where turf is not feasible, natural soils must be utilized, the purpose being to develop a clean, smooth surface. The upkeep of such surfacing is not expensive, but it requires filling holes and low places, and constant dragging to maintain smoothness.

**Laying Out the Field.** Occasionally it may be necessary for the coach to lay out a football field without the use of engineering instruments. One simple method (see illustration) may be explained as follows:

Establish the general center line (crown) of the field. Drive a stake at point A, which is to center the goal post at one end of the field. From this point, establish a line 360 feet long down the desired center of the field, and drive a stake at point A' which will center the goal post at the opposite end of the field.

While the line is stretched between points A and A', measure 60 feet toward the center of the field from each of these points, establishing points B and B'. From point A, describe arcs of 80 feet toward each side line. From point B, describe arcs of 100 feet toward each side line.

The intersection of these arcs from A and B will establish two corners of the field, C and D. Repeat this operation from points A' and B' at the opposite end of the field, establishing points C' and D', the other two corners of the field. By connecting the four points C, D, C', and D' a field 360 feet long by 160 feet wide will be marked off.

As a further check, the diagonals

CD' and C'D should measure approximately 394 feet. Permanent markers should be placed at the four corners. The yard lines may then be laid out in accordance with official rules.

For ease in subsequent marking of the field, it is recommended that permanent spikes be placed at least 10 feet outside the playing area, 10 yards in from each end line, and at intervals of 5 yards down each side line. Stretching twine between these corresponding spikes at opposite sides of the field facilitates the proper marking of the field for play.

**General Care.** During the football season, general maintenance of the field consists largely of filling up holes, mowing, renewing line markings, and watering when necessary. During the off-season, the field should be top-dressed with ¼ or ½ inch of topsoil spread evenly, and dragged smooth to fill up holes. At this time the field should be fertilized. It should be mowed and watered as necessary.

## **THE BASEBALL FIELD**

It is recommended that the baseball field be separate from and outside the football field and track oval. Development and maintenance of a good turf for football is difficult if the area receives intense use during the spring months.

However, problems in the use of the same area for football and baseball aren't so serious as those encountered where baseball and track are conducted in the same areas. Both sports are at the height of activity during the spring months, and there are constant interruptions and actual physical hazards during practice sessions because of the types of activities in each sport, the number of participants involved, and the minimum areas required.

Practice in one sport is often postponed or curtailed whenever a home interscholastic contest is scheduled in the other. For these reasons, every effort should be made to segregate facilities for these two spring sports.

**Orientation.** Since there's no pattern governing the general flight of a baseball, orientation of the field is based on the protection of players in the more hazardous positions. These players are the batter, catcher, and pitcher.

A line drawn through these positions is therefore used as the axis for orienting the field. This axis is placed at approximately right angles to the late afternoon sun rays. This places home plate in a general north-by-east or south-by-west location at one end of the axis.

Professional baseball fields aren't always oriented in this manner, since their primary concern is the comfort of spectators rather than the welfare of the players.

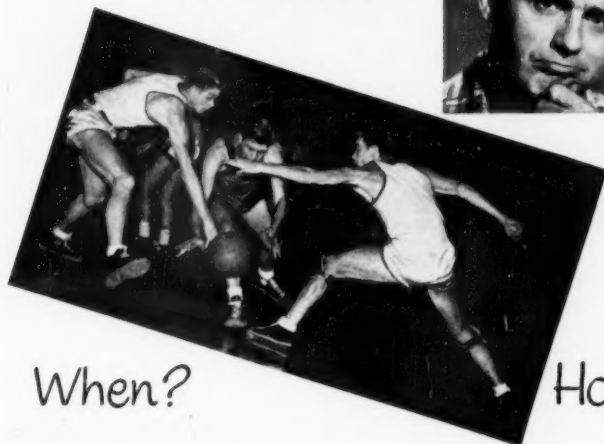
**Drainage.** Surface drainage of the diamond is accomplished by planning the infield grade away from the pitcher's mound toward all base lines. Official baseball rules permit a slope of 15 inches from the pitcher's box to the base lines.

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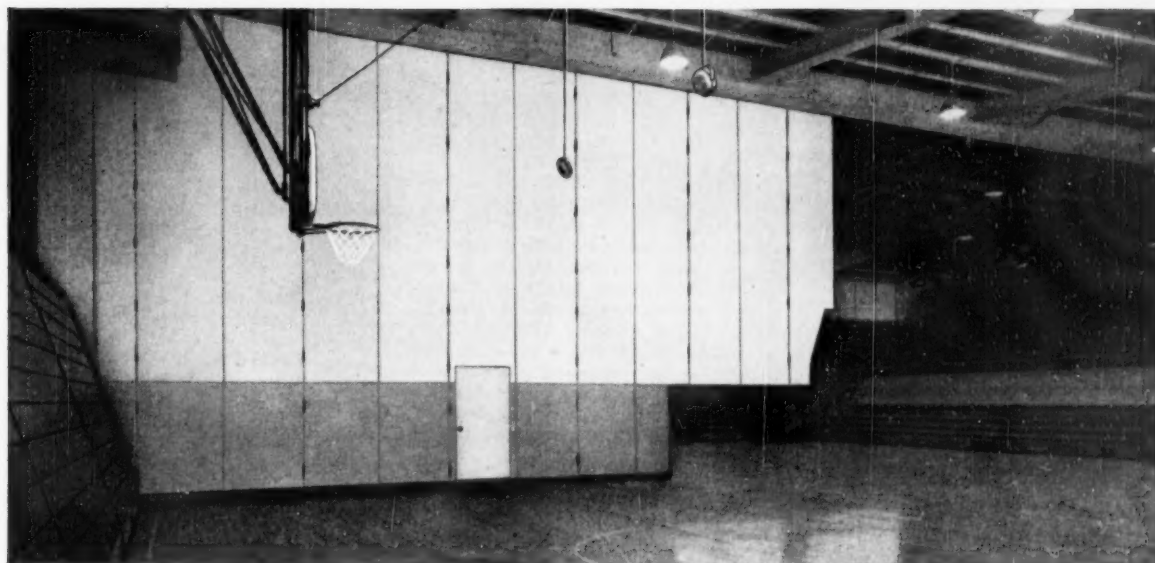


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Accommodates *all* of a player's football, basketball or baseball gear, solves the old problem of *drying and storing* sweat-soaked equipment. Ruggedly made—extra heavy steel rod, electrically welded into a strong, one-piece unit. Molten tinned finish protects permanently against rust and the corrosive action of perspiration.

Each, complete with  
Number Plate, f.o.b.  
our Texas Mill . . . . .

**\$160**

\* Write for literature on American Approved  
Gymnasium Baskets, All Steel Basket Racks,  
Foot Baths and Dressing Room Equipment.

# AMERICAN

PLAYGROUND, DEVICE CO.  
ANDERSON, INDIANA

WORLD'S LARGEST MANUFACTURERS OF FINE  
PARK, PICNIC, PLAYGROUND, SWIMMING POOL  
AND DRESSING ROOM EQUIPMENT.

ifies an 8 inch drop within a 9 foot radius of the pitcher's box, and a 7 inch drop from that radius to the base lines. Home plate and the base lines must be level.

In the outfield, final surface grading should provide for a slope away from center field toward right and left fields. This grade may approximate 1 per cent, or a drop of 1 foot to each 100 linear feet.

The following is a recommended procedure where subsoil drainage of baseball fields is necessary:

When the subsoil is an impervious, heavy clay, subsurface drainage is also needed. The first step in planning a tile drainage system is to locate an outlet of sufficient depth to properly drain the property. It's important to carry away excess moisture as quickly as possible following heavy rains. A water-logged soil isn't conducive to good grass growth because roots do not get needed oxygen.

Subsoil drainage consists of placing agricultural tile lines in parallel or herringbone pattern. The heavier the clay soil the closer together the lines are placed, varying from 15 to 30 feet apart. They are usually placed 12 to 18 inches beneath the final surface grade.

The tile lines are laid to provide a minimum fall of three inches per 100 lineal feet. If the trenches are back-filled with coarse cinders or crushed rock to within eight or ten inches of the surface, quicker drainage is assured. Topsoil is then filled in on top of the gravel or cinder fill.

**Surfacing.** The most desirable surface for a baseball field is grass, with base lines and other portions "skinned" as diagrammed in the Official Baseball Rules. Such playing surface is less dusty, sheds water better, and is not so destructive to baseballs as the diamond that is wholly "skinned."

If grass isn't feasible, an acceptable surface is the "skinned" infield with the outfield turfed or stabilized to prevent dust and erosion. The use of calcium chloride alleviates the dust problem on "skinned" infields.

**Laying Out the Field.** For absolute accuracy, the baseball diamond should be laid out with the use of engineering instruments. However, it's possible to lay out the diamond with the possibility of error reduced to the fractional differences that may be encountered by varying degrees of stretch in the steel tape or twine used in making measurements.

The procedure, using a steel tape, would be as follows: Place home plate at the desired location, driving a spike or stob at the back point. From this point, measure 127 feet 3 3/4 inches toward the desired location of second base, and drive a spike at this point.

With the tape still in this position, measure 60 feet 6 inches from home plate to locate the front of the pitcher's plate. From home plate, describe a 90 foot arc toward first base, and a 90 foot arc toward third base. Then from the point at second base, describe 90 foot arcs toward first and third bases.

The intersection of these arcs with arcs previously described from home plate locates first and third bases. As a further check, the points marking first and third bases should be the same distance apart as the points marking home plate and second base, 127 feet 3 3/4 inches.

Official rules specify that bases shall be 15 inches square. It should be noted that first and third bases are within the 90 foot distance from home plate, while the center of the bag at second base is placed directly over the spike designating second base.

The pitcher's plate, located 60 feet 6 inches from home plate, is 6 inches wide and 24 inches long, 12 inches being on each side of the imaginary line between home plate and second base.

Home base is 17 inches wide and 17 inches from the front of the base to the intersection of the first and third base lines. The rear of the base is pointed so that the entire base is in fair territory.

Batters' boxes should be lined off on each side of home base, 4 feet wide and 6 feet long. They are 6 inches away from the side of home base, and extend 3 feet forward and 3 feet backward from the mid-point (8 1/2 inches) of home base.

There should be a minimum of 250 feet along the first and third base foul lines as fair territory, with 300 to 350 feet recommended. Coaching boxes, 20 feet long and 10 feet wide, are located 15 feet from first and third bases.

**General Care.** The field should be sprinkled often, in dry seasons every day. This necessitates adequate water outlets, properly located. Holes and low places should be filled as necessary.

The infield should be dragged every day. Dragging should be done in a circular motion from the pitching mound toward the bases (with an entirely "skinned" infield). A heavy wire mesh screen, or cocoa and rubber door mats, make excellent drags.

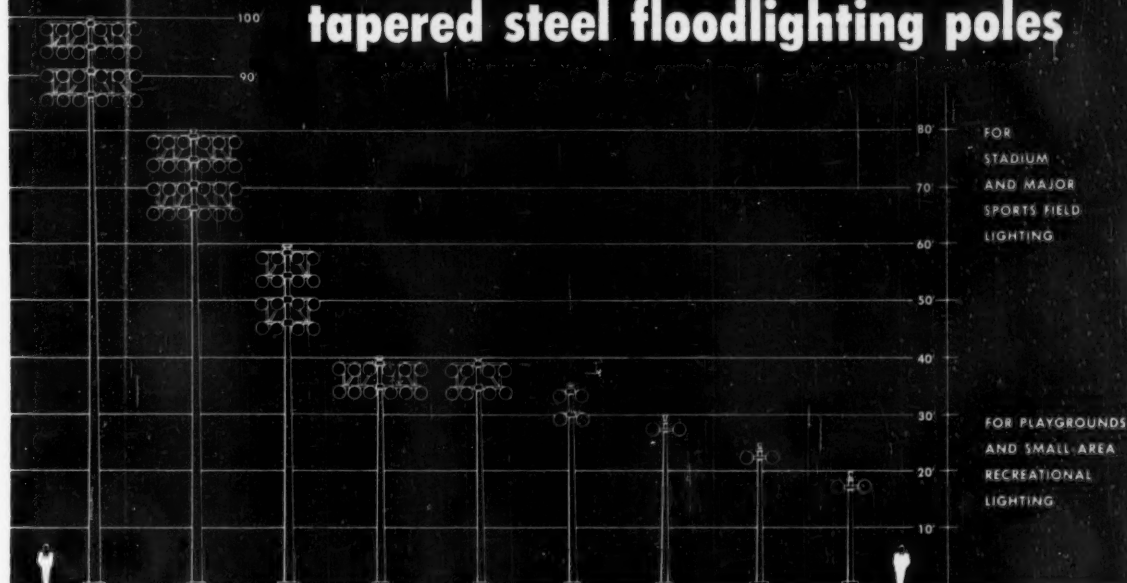
Loose stone and other extraneous material should be removed from the outfield. Grass diamonds should be mowed frequently. A satisfactory height for grass on the infield is about 1 inch.

A proper environment for conducting interscholastic athletics is necessary if maximum educational values are to be realized. Facilities determine to a large extent the quality of this environment. While it's the responsibility of qualified leadership to utilize existing facilities to the best advantage, certain minimum requirements are essential. Official standards for playing areas must be observed. Suitable dressing, shower, equipment, and storage rooms are necessary, and provisions must be made for spectator accommodations. If the program is to function as an educational asset, administrators must provide appropriate facilities.



All offer unique advantages...because...

## All are **MONOTUBE** tapered steel floodlighting poles



NOTE: Monotube design permits extreme flexibility in arrangement and number of light units per pole

**W**HETHER your plans call for floodlighting an immense stadium or the smallest recreational area, give careful thought to pole selection. A wise choice will pay off in prolonged lighting efficiency and economy.

Union Metal engineers have dealt for years with floodlighting problems of every description, have developed continuous-tapered steel Monotubes in standard types and sizes to meet every floodlighting need with maximum efficiency and economy. No need for compromise or makeshift arrangements! Moreover, Monotubes are noted for simplified installation, unequalled attractiveness and easy, low-cost maintenance.

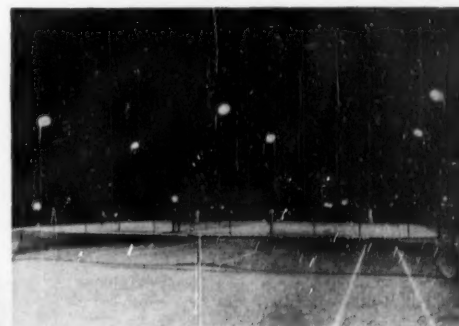


SEND FOR BULLETIN

The bulletins shown here give facts that shouldn't be overlooked in your planning—Catalog No. 76-A on sports field floodlighting; Bulletin FL-102 on small-area or recreational floodlighting. For either or both, write to The Union Metal Manufacturing Company, Canton 5, Ohio.



*Typical Monotube stadium installation.*



*Monotubes used in small-area floodlighting.*

**UNION METAL**  
*Monotube Floodlighting Poles*

# NEW EQUIPMENT

For full details on any of these products, write to: Scholastic Coach, New Equipment Department, 33 West 42 Street, New York 36, N. Y.



• **STEEL CHAIN NETS.** Ideal for indoor or outdoor use, these basketball steel chain nets will withstand any weather and won't shrink, unravel, tangle, rip, or stretch. Easily installed, absolutely regulation in size, the steel chain nets come with a three-year guarantee. Manufactured by the Jayfro Athletic Supply Co.



• **LAMINATED BAT.** Laminated of four pieces of selected second-growth, air-dried northern ash over a core of straight-grained hickory, this revolutionary type bat has greater strength and solidity than the one-piece ash. Chipping is reduced to a minimum, and the bat feels better and swings faster. Manufactured by the Bancroft Sporting Goods Co., the laminated bat has been approved for official college and high school play, and has recently been unanimously approved by both major leagues.

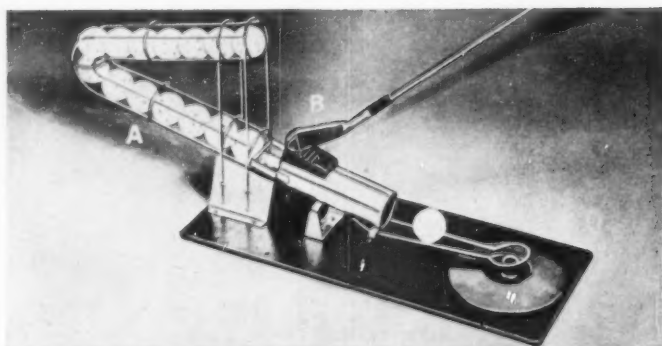


• **ANTI-SLIP SOLE.** Important addition to Sperry Top-Sider Footwear is this Racquet Oxford with an anti-slip sole that is suitable for handball, tennis, squash, badminton, and other court games. It is also practical for use in deep-sea fishing, as well as in sailing and yachting.



• **LITTLE KID BACKBOARD.** Youngsters can now play basketball with equipment tailored to their specifications. Easily and quickly installed, this basket-backboard unit can be adjusted on all regulation equipment. Permits five 2 1/2" adjustments from 8' to 8' 10" from floor, and projects 2' nearer foul line, facilitating shooting. Safe (no posts or supports to run into), light (weighs only about 25 lbs.) yet properly resilient, the unit folds easily and can hence be carried by one man. Designed with no stress on lip of regulation hoop, the unit is not damaging to the regulation equipment. Important contact points are padded, nothing touches the floor. Little Kid Basketball offers the game to age groups previously incapable of handling the regulation equipment, stimulates interest, and permits earlier mastery of skills. Comes in four models, with carrying case made on order.

• **RUBBER-COVERED BASKETBALL.** This is the new Pylon rubber-covered basketball being manufactured by The MacGregor Co. In addition to a larger, more readable trademark, the ball features an improved tacky feel, making for superior ball-handling and shooting. Extremely long-lasting, perfectly shaped, and economical, the ball is ideal for play on every level of competition.



• **GOLF PRACTICE DEVICE.** The A. G. Spalding & Bros.' "Lazy Goller" tees up 15 balls for the golfer. The hopper holds 15 balls. The club-head touches the trigger, releasing a ball that rolls down runway to tee. When club-head is removed from trigger, runway drops from sight, leaving ball on tee ready for shot!

## Free Catalogs and Literature

**A**LL the items below are available to schoolmen as stipulated in the copy. When writing directly to the distributor, it's advisable to use official school stationery.

● **Athletic Equipment** featuring boxing, baseball, basketball, football, and gym items is completely illustrated and described in the new Aalco Mfg. Co. catalog. Detailed information on gym mats and related items is given with special pages on the new Vinyl Plastic Coated Duck for mat coverings and Aalco's complete mat rebuilding service. Many new designs for outdoor basketball equipment are shown, such as adjustable and removable all-weather backboards (available with extension mountings). For your free copy of this catalog, check the "Aalco" listing in the master coupon on the last page.

● **A Check List for Maintenance Supplies** is being offered by Huntington Labs. Spaces are provided for entering quantities on hand as well as quantities needed to restore to normal levels. By listing a wide variety of different items on each of its four pages, the folder also helps the checker avoid overlooking supply items which may be temporarily depleted. Main item groups include soaps and detergents, shampoos-creams-lotions, general purpose cleaners, floor finishes, etc. For your free copy, check the "Huntington" listing in the master coupon on the last page.

● **The MacGregor Spring and Summer Catalog** for 1954 is filled with 90 pages of information about MacGregor baseball, softball, track, tennis, badminton, and miscellaneous equipment. Every page is completely new, and the catalog also includes a 12-page section printed in full-color. Copies of the catalog may be obtained from your MacGregor distributor.

● **The Complete Story** of the Seamless Rubber Co. products is illustrated and explained in the new Seamless catalog. Attractively designed, the catalog highlights the Seamless Kolite and Sealon wound lines of balls. You may obtain your free copy of this catalog by checking "Seamless" in the master coupon on the last page.

● **Portable Grandstands** are featured in the attractive four-page illustrated brochure being distributed by Wayne Iron Works of Wayne, Pa. Full details are given as to construction, materials used, dimensions, capacities, and safety standards. Complete specifications are covered on a special specification insert. Write to Wayne at above address for your free copy.

# IT'S PERSONAL!

## Fight ATHLETE'S FOOT the New Sanitary Way



**KILL ATHLETE'S  
FOOT Fungus  
with Individual  
Foot Treatment**

**1. Step on  
2. Mark time  
3. Step off  
*That's all!***

**no dilution • no contamination • no re-used solution**

The SANI-MISTER Spray Dispenser is the most sanitary device yet developed for protection against the spread of Athlete's Foot fungus in your school's shower rooms.

Every foot treatment is individual—clean, full-strength, uncontaminated. No shower drippings can dilute it. No previously used solution to cause possible infection.

According to laboratory tests, SANI-MIST solution kills Trichophyton Mentagrophytes, the principal fungi causing Athlete's Foot, in less than 30 seconds. The SANI-MIST method is economical too. Costs only a few cents a day. For complete details mail coupon today.

## SANI-MIST<sup>INCORPORATED</sup>

1724 Chestnut Street, Phila. 3, Pa.

SANI-MIST, Inc., 1724 Chestnut St., Phila. 3, Pa.

5

Please send me complete details of the safe, clean SANI-MIST method of Athlete's Foot prevention.

NAME \_\_\_\_\_ TITLE \_\_\_\_\_  
COMPANY \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_



# NEW EQUIPMENT

For full details on any of these products, write to: Scholastic Coach, New Equipment Department, 33 West 42 Street, New York 36, N. Y.

• **FIELDERS' GLOVE.** The MacGregor Co.'s Gus Bell (Cincinnati Reds) model is a large finger model glove of selected heavyweight leather, full leather lined, with a large one-piece leather tunnel web, full-welted throughout, laced wrist.



• **SPORT SEAT.** Sturdy, comfortable, built for years of hard use, this H. & S. Freed & Co. all-metal seat can be easily secured to any board, bench or bleacher. Felt-padded backrest and seat are covered with weatherproof plastic available in three colors. Comes in four models, rust-resistant, and weighs less than five pounds.



• **STEEL PADLOCK.** This stainless steel Master lock is rust-resistant and won't corrode in humid conditions. Key control enables boys to open their own locks by dialing combination, while coach has access to all lockers by means of the control key.



• **ADJUSTABLE BACKBOARD.** This Aalco Mfg. Co. product can be fixed at either official 10' or at 8½' for youngsters simply by loosening two thumbscrews on the mounting struts and adjusting assembly accordingly. Fan-shaped, all-weather board comes with heavy duty goal with net hooks and orange net. Steel mounting bracket holds board and goal 2' out from steel post, permitting greater safety in play underneath. Ideal for outdoor areas.



• **PLASTIC PADS.** A revolutionary type protective padding made of a cellular plastic called Ensolite is being produced by U. S. Rubber Co. Honeycombed with millions of tiny, non-connecting air cells, it's light in weight and won't absorb perspiration or moisture in any form. Possesses exceptional shock-absorbing property.



• **3-ROW GYMSTAND,** developed by Sico Grandstands, will hold 36 people indoors or out. Utilizes "speedlock" process for fast assembling or dismantling by one man in matter of minutes. Cross-braced steel supports and select douglas fir planks store in minimum space. Wooden scuff pads at base of supports permit easy skidding from one place to another and protect gym floors. Depth of row is 23".

## Athletic Insurance

(Continued from page 28)

There are other problems connected with insurance. One state reports that commercial companies have attempted to enter the field in competition with the association-sponsored plan, but only in those types of coverage which have, for the past several years, shown a profit. There is no offer to provide competitive coverage for those types of activity such as contact sports which, in the opinion of the state association officers, are most needed by the schools.

Insurance to cover liability in connection with certain state-sponsored events, such as the tournaments which lead up to a state championship, is taken by a number of states. When a tournament is held on a high school floor and is sponsored by the local high school, it's generally agreed that the management is not liable for any injury which might occur in connection with the event.

In the case of a state final tournament held on a university floor, there's some doubt as to whether there is liability for such injuries. In at least one state supreme court case, it was held that the athletic department of the given university is a corporate body and not merely a division of the state university. Hence, it might be held liable for any injury which occurs in connection with its sponsorship.

Because of these doubts, several state associations take out liability insurance for their final tournament. In some cases, such insurance is taken for each tournament of the series sponsored by the association. The cost of such insurance is a small percentage of the total receipts.

Still another type of insurance is thought advisable by some of the state associations. The Minnesota H. S. League takes out a master fidelity policy to cover all state league officers (including those who handle tournament funds). This policy is in the amount of \$50,000 and insures against loss of state association or tournament funds handled by anyone connected with the state association work.

Official for Collegiate Competition

## WEB BED TRAMPOLINE

Large Size, Folding Type  
HIGHER QUALITY, LOWER COST

Designed by  
Bob Fenner, Nationally Known  
Trampoline Authority

PARTS AVAILABLE  
FOR ALL TRAMPOLINES

Write for  
FREE LITERATURE  
**FENNER-HAMILTON CO.**  
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# All these are Bradleys

- All Provide  
Maximum  
in Sanitary  
Washing  
Facilities

## WASHFOUNTAINS



Full circle 54-in. Bradleys accommodate up to 10 students simultaneously. Model shown is pre-cast material. 36-in. models (up to 6 persons) also made.



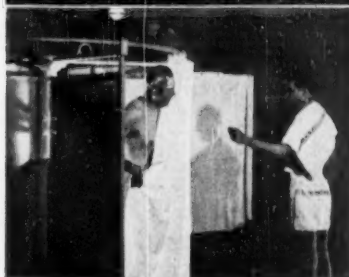
Bradley Enameled Iron Washfountains are produced in white or forest green, full circle or wall type semi-circular. Stainless steel models—also in full and semi-circular types, 36" and 54" diameters.

## DUO-WASHFOUNTAINS

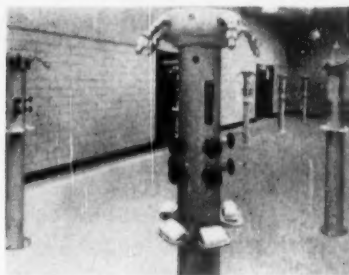


Many prefer the two-person foot-controlled sanitary Duo-Washfountain for the smaller washrooms, and at cafeteria entrances, in laboratories, schools, office buildings, etc.

## MULTI-STALL SHOWERS



Bradley Multi-Stall Showers come in 3- and 5-stall units. Three piping connections only are required to serve all stalls—one each for hot and cold water, and one for drain.



Without stall partitions, Bradley Column Showers provide still lower cost shower facilities.

Standardizing washing facilities by means of Bradley Washfountains and Showers has been growing rapidly. Besides savings in space, installation costs and water consumption, Bradleys provide maximum washing facilities in the *most sanitary* manner.

Washfountains serve running water from the sprayhead to groups simultaneously. The bowl is self-flushing, faucets and faucet contacts are eliminated. Only one set of piping connections needed for each multi-person Washfountain.

Bradley Showers are made in three- and five-stall units with or without separating partitions. Piping connections are reduced—installation simplified.

Catalog free on request. **BRADLEY WASHFOUNTAIN CO.**, 2281 W. Michigan Street, Milwaukee 1, Wis.

Write for  
Catalog  
5204

**BRADLEY**  
washfountains  
and showers

Distributed Through Plumbing Wholesalers

## Basketball's Answer to YOUNG America



## New SCALED-to-SIZE BACKBOARD UNITS

Adjustable Basket-Backboard Unit that converts existing court for kids' use in just five minutes

*LITTLE KID is proud of  
its versatility*

- Reduces specifications to fit physical capabilities of youngsters
- Fits all regulation equipment
- Collapsible for carrying and storing
- Adjustable in height to "grow" with youngsters
- Enlarges phys ed programs to include younger age groups
- Possesses double utility — ideal for playground use also

The Little Kid Basket-Backboard is also available in

- WALL UNITS • PLAYGROUND
- FLOOR UNITS • UNITS
- BACKYARD UNITS

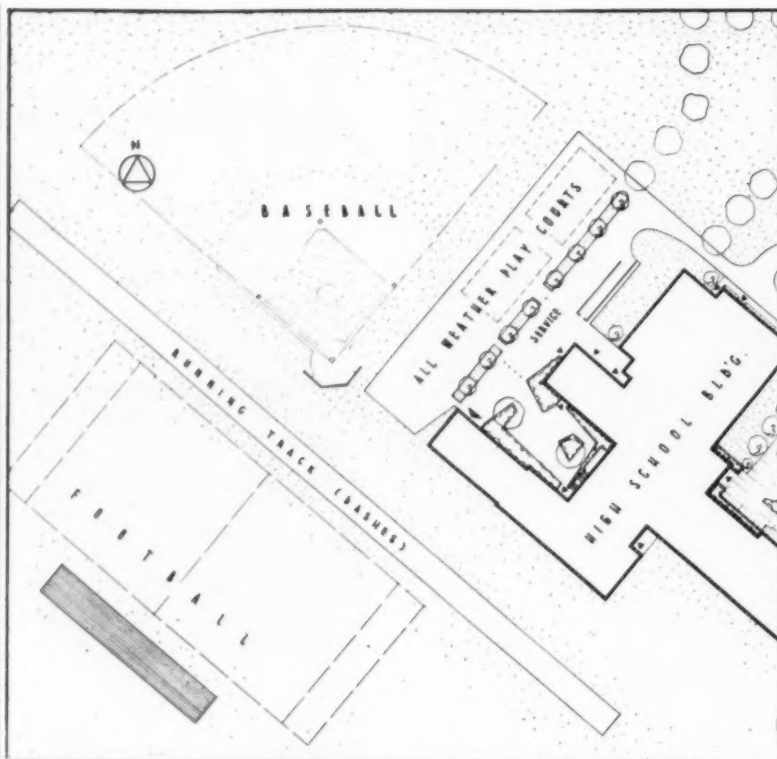
If it's scaled-to-size basketball equipment you want, **LITTLE KID** has it!



For brochure, write to

## Little Kid Basketball

130 WEST 42nd STREET  
NEW YORK 36, N. Y.



Blueprint of the outdoor physical ed facilities being developed over a 17-acre site at Norwayne High School. Not shown in the layout is an area south of building for small games and two areas (east) for girls play and parking.

## The Steel-Frame Gym

(Continued from page 12)

surface consists of 1½" thick hard maple with steel splines set in mastic.

The bleacher seating is of the telescopic type to assure maximum use of the floor. The backboards are hinged, permitting them to be swung up, so that the gym may be used for all types of school and community functions.

The gym is directly adjacent to the building's main lobby. Large enough to handle any size crowd and readily accessible from the parking area, the lobby contains the ticket booth as well as corridor gates which confine spectator crowds to the lobby, gymnasium, wash rooms, and cafeteria during functions outside of school hours.

Shower and locker rooms are located at gym floor level, leading off a corridor adjacent to the gym. An instructor's office has been provided for both the girls' and boys' departments. There's also ample storage space for equipment, including a large caged area for the storage of athletic uniforms.

**PLANS** for Norwayne H. S. (Wayne County, O.) were developed with the assistance of Dr. John H. Herrick and staff of the Bureau of Educational Research of Ohio State U. Roy E. Sinclair, superintendent of the North Central School District, and Ralph Ely, superintendent of Wayne County, directed the planning, while the firm of Spahn and Barnes of Cleveland Heights, O., served as architects for the project. Grier Riemer was the Site Planner and Landscape Architect. The bulk of the equipment was supplied by the following manufacturers:

Wayne Iron Works—Folding Bleachers  
E. F. Guth Co.—Gym Lights  
J. E. Porter Corp.—Backstops  
M. D. Brown Co.—Electric Scoreboard  
Luria Engineering Co.—Basic Elements of Structure  
Robbins Flooring Co.—Ironbound Continuous Strip Flooring



Separate locker room provisions have been made for visiting team use, arranged so that the girls' shower and drying room can be used in connection with it.

The outdoor physical education facilities being developed over a 17-acre site, incorporate many activities. The football field is located on the highest part of the site, from which the land rolls gently to the north. As the field is developed, bleachers will be added to the south, as indicated in the accompanying site plan.

A running track will also be included, and will provide for a 220-yard straightaway for dashes and hurdles. Other facilities include a baseball diamond with ample outfield space, a girls' hockey field, and a soccer field.

An all-weather paved area is provided to the west of the building for such activities as tennis, badminton, basketball, and volleyball. The space to the south of the building has been planned for archery and small games.

## Filming Football

(Continued from page 26)

rangements are worked out will pay off in prompter service. For quick processing is only half the battle—the other half is getting the films back by the quickest method. And the processing laboratory follows the coach's instructions regarding the return of such films.

In some cases this may mean the use of air mail and special delivery service. Where this is requested, the processing station should be fully informed and the necessary postage included with the films.

In other cases, films may be returned via air or rail express collect. Here it may be preferable to have the films picked up at the airport or railway station. Although the coach may not have the built-in projector in his car that he is always dreaming about, he always has an assistant manager to chase out to the airport at plane time.

In addition to sending Sports Film labels to coaches, Eastman Kodak will be happy to supply copies of its informative literature, including "Production and Use of Football Motion Pictures," "Techniques for Filming Football," etc. A new folder describing Kodak's 16-mm. motion picture equipment is also available. Requests for the literature or information on the processing service should be addressed to Cine Kodak Sales Division, Eastman Kodak Co., Rochester 4, N. Y.

## University of Miami Field House Hailed for Modern Facilities!

### PENCO ALL-MESH STEEL LOCKERS INSTALLED IN PLAYERS' AND COACHES' DRESSING ROOMS



Better ventilation, greater sanitation and visual inspection of locker contents are features of these Penco Air-Lite Lockers. Football and baseball lockers are 24" x 24" x 72", while basketball, boxing and track lockers are 12" x 24" x 72". All are mounted on sanitary concrete bases.

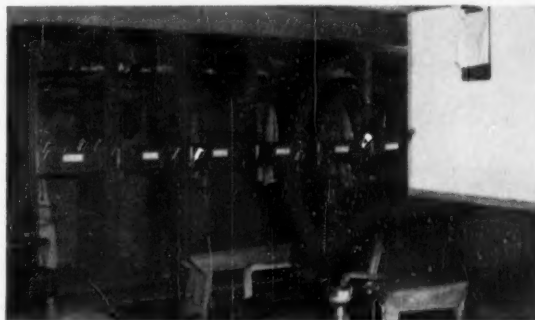


Football lockers have shelf for headgear and books, coat hanger rod for jerseys and coats, and hooks for shoulder pads and similar gear.

THE finest available dressing, training and equipment storage facilities are installed in the University of Miami's great new field house. Designed to meet the precise needs of football and other varsity sports, this model athletic building is equipped with Penco Air-Lite Lockers of expanded steel open-mesh construction for maximum ventilation—providing far greater air circulation than perforated-type lockers. For less demanding ventilation requirements, Penco also makes an Air-Lite locker with door only of open mesh, as well as a complete line of standard louvered lockers. Penco Steel Shelving in a wide variety of sizes also provides economical storage for athletic equipment and supplies.

For literature and prices write—

**Penn Metal Corporation of Penna.**  
40 OREGON AVE., PHILADELPHIA 48, PA.



Coaches' lounge also includes roomy Penco Air-Lite Lockers. Uniforms and street clothes are kept fresher, drier—contributing to better health and morale. Lockers are pilfer-proof.

# A Whirlpool for \$62.00

**T**HE whirlpool bath has long been accepted as an exceptionally useful device for the treatment of sprained joints, strained muscles, inflamed tissues, and most other types of injuries.

Its basic principle is to have warm water mixed with air push against and circulate around the affected part. The impact has a good massaging effect, while the heat promotes healing by increasing the circulation and loosening and relaxing the injured tissues.

Unfortunately, the cost of a whirlpool bath puts it out of reach of the

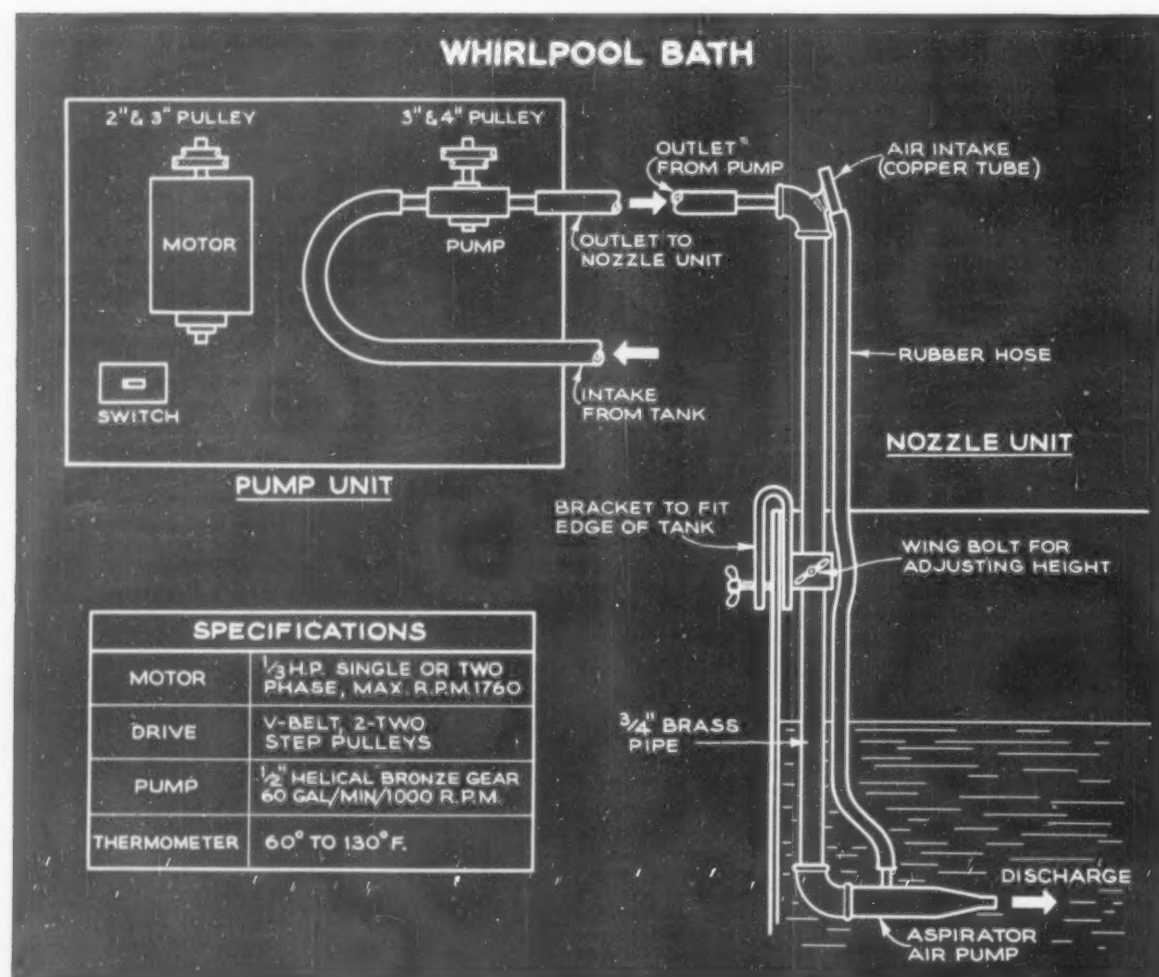
high school and small college operating on a limited budget. But that doesn't mean they must do without one. Like Dalhousie, they can build their own whirlpool bath. And a good one, too, hueing close to professional specifications.

Does it cost much to build? No, sir! The Dalhousie whirlpool—of which we're mighty proud—was built for the princely sum of—\$62! Here's how the bulk of the money was spent:

|                       |         |
|-----------------------|---------|
| Motor, second hand    | \$15.00 |
| Gear pump (see plan)  | 19.00   |
| 20' plastic hose @ 7¢ | 1.40    |

|                       |      |
|-----------------------|------|
| Hose clamps           | .80  |
| Thermometer           | 3.00 |
| Pulleys and belt      | 5.00 |
| 45-gallon drum        | 4.00 |
| 18-gallon washer drum | 4.00 |
| Aspirator pump        | 2.00 |

We draw water at the desired temperature from a partially filled tank, and push it right back into the tank after adding air to the stream just before discharging it. This is done by using a small gear pump, two sections of garden hose, and an aspirator air pump obtained from the university chemistry lab.



The accompanying plan shows the construction and specification of the bath.

It should be noted that our two tanks vary in size and shape, depending upon the size of the part needing treatment. We use a 45-gallon drum for knees, thighs, and shoulder injuries, and a smaller 18-gallon oblong wash boiler for ankle, wrist, or smaller body parts. This set-up is very convenient and saves time, energy, and money.

We make sure that all injuries, no matter how small or minor, are examined by a doctor, and that his diagnosis and prescription are carefully recorded and followed. The boys themselves aren't allowed to operate the bath, as they don't know the physiological limits and temperature tolerances of the body.

A variation in the water flow is produced by increasing or decreasing the rpm of the pump through various pulley arrangements. The flow of water and temperature depend on the part being treated and the amount of tenderness or soreness of the injury. We use 360 to 550 gallons per hour with a  $\frac{3}{4}$ " maximum discharge and 103-112° F as the temperature limit.

These limits are supported by Thorndike who says in his excellent book, *Athletic Injuries*: "The safe operation of electrical and hydrotherapeutic apparatus requires both practical training and a special study in physics."

All in all, we have made a very functional and useful piece of therapeutic equipment at a low cost.

## Playground Layout

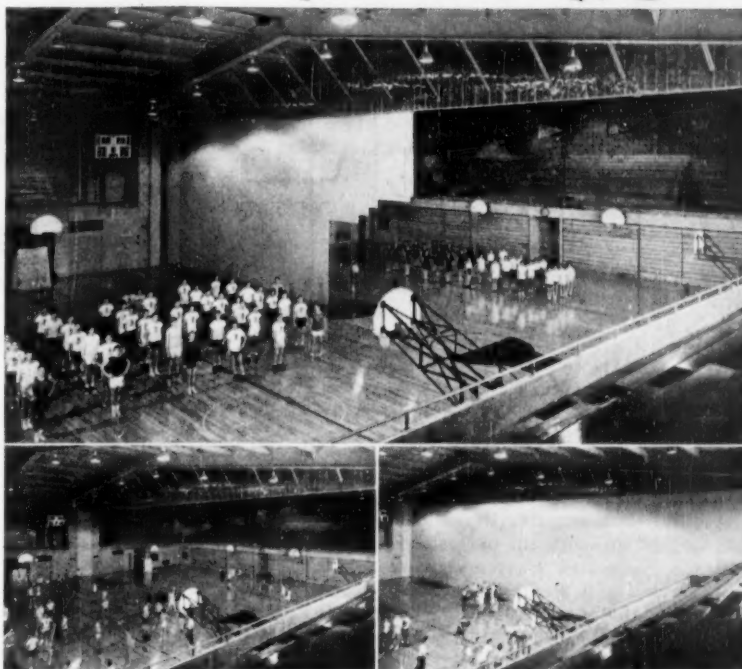
(Continued from page 18)

dent of the American Playground Device Co.

"There are some fundamental rules, however. Children play best and benefit most when they play within their own age groups. Further, the apparatus in these areas should be sized and designed to intrigue the interest and develop the abilities of the various age groups. Only strong, ruggedly built, safe equipment of approved design should be installed. It should be free from mechanical gadgets or parts that will require constant maintenance, attention, or supervision.

"The apparatus units should be installed in line or in batteries to conserve ground space for the essential free-play and organized game areas, and to provide a neater, more orderly, and more attractive appearance generally, with additional safety for the children."

## Take a tip from Hinsdale High!



Childs and Smith, Architects

### Stretch both space and appropriation with Folder-Way® Automatic FOLDING PARTITIONS by Richards-Wilcox

In these photographs taken at Hinsdale Community High School, Hinsdale, Ill., you can readily see how Richards-Wilcox FoldeR-Way folding partitions provide greatest flexibility to given areas of space. You can see how the partitions close to isolate the boys' and girls' gym classes from each other. Also, how the FoldeR-Way partition opens for conference games, and similar events, making the complete gym one vast playing arena and gallery.

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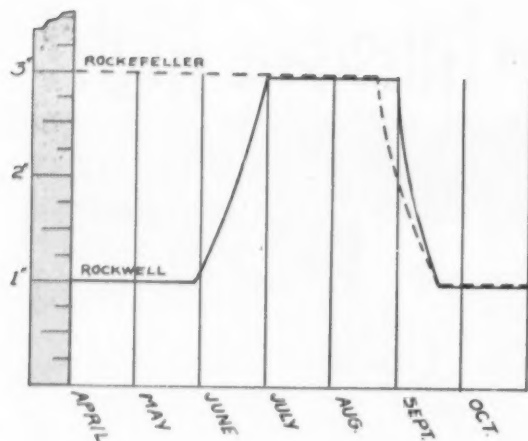
See an R-W FoldeR-Way Automatic Partition in operation at any of the Schools in the partial list at right, or write for address of installation nearest you:

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Kinkaid School Gymnasium, Houston, Texas—Opening: 71' x 21'  
High School, Brookline, Mass.—2 Openings: 100' x 20' and 130' x 20'  
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Grass becomes deeper rooted whenever the height of the cut is raised during the off seasons. The chart shows the height of the cut on the varsity fields at The Taft School.

## Better Turf for Athletic Fields

**A**LTHOUGH it is universally recognized that a luxuriant wear-resistant sod contributes immeasurably to the utility, safety, and beauty of an athletic field, the unfortunate fact remains that most fields do not measure up to desired standards. Excessive wear and tear in all seasons and weathers creates such formidable problems that the persons responsible for maintaining the turf are apt to adopt a defeatist attitude.

Having inspected the turf on many athletic areas, I believe that few of these problems are insurmountable in light of modern know-how in the growing of grass. Indeed, an increasing number of schools and colleges have already obtained turf that's an asset to their campuses. Moreover, recent scientific developments augur well for the future.

While no panacea for growing better grass has yet been discovered, we know that the road to success lies in a program embracing the following four principles:

1. Grass will grow luxuriantly when fed two or more times a year.

2. Grass becomes deeper rooted and sturdier if the height of cut (distance from the ground to the edge of the mower cutting bar) is raised in off-seasons. It's then able to crowd out weeds and crabgrass and to recover more quickly from injury in the playing season. This higher clipping in off-seasons is of paramount importance on sports areas throughout the North. In the South, where Bermuda grass predominates, it is of less importance.

3. Grass requires an application of lime every two or three years in many parts of the country. Liming can, however, be overdone. The quickest and most accurate means of finding out if it's needed is to send a soil sample to your state university or commercial analyst.

By **GEOFFREY S. CORNISH**  
*Turf Specialist, Amherst, Mass.*

4. Aeration is a major contribution to better turf on all fields subjected to heavy traffic. This is the removal of small cores of soil, three to five inches deep, with special equipment to relieve soil compaction thus permitting air, water, and fertilizer to penetrate to the grass roots.

By making these principles the basis of the turf program, one is almost certain of success. Sometimes, however, the problem of eradicating insect pests arises. The Japanese beetle grub, for example, is now found in most states east of the Mississippi and causes havoc on turf areas until its presence is detected.

Early indication that either it or other kinds of destructive grubs are in the turf is the appearance in large numbers of starlings, moles, and skunks which feed on these insects. If suspected, the grubs can be found by examining the sod a half inch or so below the turf. They should then be eradicated with an insecticide such as chlordane, which will

provide protection against further invasion for at least five years.

It will be noted that two important items—the re-seeding of bare patches and the eradication of weeds—weren't listed in the basic principles.

While re-seeding on bare patches is required many years, it will be found that as the turf becomes sturdier through proper care this maintenance item will be reduced to a minimum. Likewise, crabgrass and other weeds will eventually disappear as the turf becomes stronger.

Because this process of grasses crowding out weeds may take several years, it's sometimes advisable to influence the competition in favor of grass by using a chemical herbicide. 2,4-D, the well-known weed killer, will eradicate many broadleaved weeds, including dandelions and plantain, without injury to the turf if used according to manufacturer's directions.

Two other chemicals, phenyl mercuric acetate (PMA) and potassium cyanate (KOCN) will kill crabgrass, while sodium arsenate, a third material, is useful as an eradicator of crabgrass and a variety of other weeds. All these chemicals



Grass grows luxuriantly when fed two or three times a year. The amounts above were applied per 1000 square feet to the fields at The Taft School.

are available in different formulations selling under many trade names.

Although results obtained with chemical herbicides are sometimes spectacular, it should be realized that these results are only temporary and the weeds will soon return unless desirable grasses are strengthened through proper care.

It is necessary to water grass in hot and arid sections to keep it alive. On the other hand, unwatered turf in cooler areas, though it may become brown in summer, will recover in autumn. Except for young grass or that on very sandy soil, it's therefore not absolutely necessary to irrigate turf in many parts of the nation unless you wish to keep the grass green in summer.

If you do resort to artificial watering, be careful in your irrigation practices. The habit of sprinkling turf lightly every day or so encourages crabgrass, while overwatering helps many other weeds become established. For those who do water, it is recommended that the watering consist of one or two drenchings a week in dry periods, wetting the soil each time to a depth of several inches.

The beautiful lawns and playing fields of the British Isles are rolled



lime is often needed. To determine its need, make a composite soil sample from at least twelve points (as shown) and then have it analyzed.

constantly. On this side of the ocean, however, soil and climatic conditions are different and excessive rolling does more harm than good.

While a single light rolling is sometimes required in spring to firm turf into the soil and again early in autumn, rolling should be kept to an absolute minimum and should always be light. Frequent rolling, an all too common practice on athletic areas, eventually spoils the best of turf.

Since every field presents an individual problem, it isn't possible to give specific recommendations as to rates and timing of fertilizer application, height of cut, etc. The 1952

## THE SHOOK Athletic Trainers' KNEE BRACE

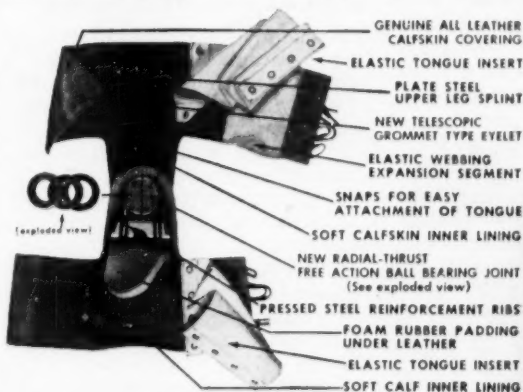
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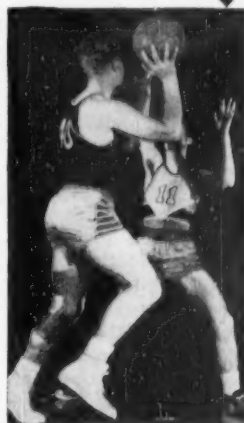


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and 1953 turf program for two fields at The Taft School, Watertown, Conn., worked out by the writer in cooperation with Duane R. Totten, the business manager, and Edwin C. Douglas, head football coach, are given as examples. All rates are per 1000 square feet.

**Rockefeller—the varsity football field.**

**Fertilizer program:** In 1952, an 8-6-2 complete fertilizer in April at 12 pounds (per 1000 sq. ft.); Milorganite, Castor Pomace or similar organic fertilizer in September at 25 pounds. In 1953, an 8-6-2 in April at 12 pounds; Milorganite or similar organic material in May at 25 pounds; Milorganite or similar organic material in September at 30 pounds.

**Height of cut:** 1952 and 1953—three inches until late August and then a gradual lowering a half inch at each clipping to one inch for the playing season.

**Lime:** 1952 and 1953—none required as shown by soil analysis.

**Aeration:** 1952 and 1953—aeration of entire field in early May. (The Taft School owns its own aeration machine, but this equipment can often be obtained on a rental basis from golf courses.)

**Weed control:** 1952—sodium arsenate spray to kill knotweed in center of field. This flat trailing weed grows vigorously in spring and summer but loses its vigor about the start of the football season and tears out at that time. It is therefore a particularly obnoxious weed on football fields. Because of the absolute necessity for the evenness of spread of the sodium arsenate and the danger to handlers, Mr. Totten undertook the job personally and obtained an almost complete kill of the knotweed. In 1953, no chemical herbicide was recommended because the grass had become sufficiently sturdy to crowd out the weeds.

**Insect control:** 1952 and 1953—no insecticide recommended because Chlordane had been used in 1950 to control Japanese beetle grubs.

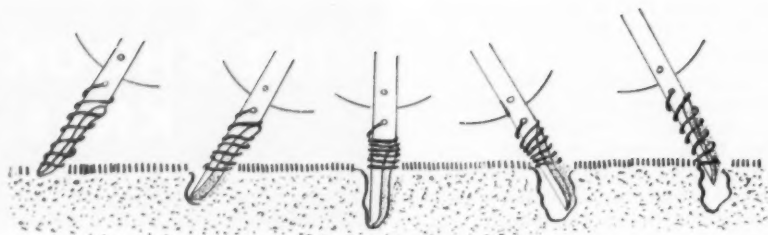
**Re-seeding:** 1952—bare patches re-seeded in April 1953—the grass had withstood the 1952 playing season and practically no re-seeding was necessary.

**Rockwell—a baseball diamond.**

Fertilizer, lime, weed control, re-seeding, and insect control recommendations were the same as for Rockefeller.

**Aeration:** 1952 and 1953—aeration of entire area in October.

**Height of cut:** 1952 and 1953—infield one-inch until end of baseball season. Then raise to three



**Aeration, which consists of the removal of small cores of soil 3-5" deep with special equipment, constitutes a major contribution to better turf.**

inches, cutting regularly at this height until September when the height of cut is gradually lowered to playing height.

While this program provided excellent results at The Taft School, it would require modification elsewhere according to soil, climate, the curriculum, and available funds.

#### **FAULTY MAINTENANCE TECHNIQUES**

It should be emphasized that no turf program will be effective if maintenance techniques are faulty. Some of these faulty techniques are listed as follows.

1. Clipping with a dull or improperly adjusted mower.
2. Clipping at irregular intervals.
3. Lowering height of cut too quickly.
4. Uneven distribution of fertilizer and other chemical materials.
5. Application in warm weather of caustic materials that burn the grass.
6. Frequent heavy rolling.

#### **BUILDING NEW FIELDS**

A turf program based upon the four aforementioned basic principles is bound to improve the grass if the various operations are carried out precisely. Poor turf will respond to this treatment, and to obtain better turf it will seldom be necessary to plow over established fields and re-seed unless the depth of topsoil is very shallow, the subdrainage hopelessly inadequate, or the surface so uneven that it holds water in pockets.

When building a new field, observation of the following points will result in better turf in years to come.

1. The provision of subdrainage if the subsoil doesn't drain readily.
2. The provision of a minimum of six inches of topsoil. Greater depths are better.
3. Provision by grading of a pitch that will allow run-off of surface water.
4. The application of lime if a soil test has shown its need.
5. The application of superphosphate to promote a deep root system.

6. The addition of humus in the form of peat, commercial humus, or well-rotted weed-free barnyard manure.

7. The thorough mixing of the lime, superphosphate, and humus into the topsoil.

8. Adequate handraking or machine floating to remove debris and to make an even surface.

9. The application of a complete fertilizer just prior to seeding.

10. The even sowing of high-quality seed. In the North, early September, and in the South, spring, are the ideal times to seed new areas.

11. Brushing or raking seed in and rolling it.

#### **NEWEST TURF ITEMS**

Since World War II, the garden sections of our newspapers and magazines have constantly reported new "miracle" grasses and chemicals. For example, it isn't uncommon to read of new grasses that will accomplish "miracles." While improved strains are on the way, the best of these will not accomplish the impossible. For some years at least, their influence on turf areas won't be as far-reaching as publicity might lead us to believe.

Improved grass strains for which seed or other propagative materials are now available include Merion bluegrass, Meyer Zoysia, and U-3 Bermuda. In the line of new chemicals, there are synthetic soil conditioners, plastic-like fertilizers that are easy to apply and are long-lasting, and very potent insecticides. While it still isn't possible to accurately evaluate the role of these materials, it's safe to say that it will be of at least modest importance on athletic turf in years to come.

While it's wise to keep abreast of new materials by reading about them and experimenting on a small scale, it's well to remember that none is a panacea for better turf. The key to better turf lies, rather, in the application of the four basic maintenance principles on established turf, and in more attention to the points outlined above during construction of the fields.



# Lighting the Way to \$

(Continued from page 7)

the four mentioned schools, with the exception of Shortridge High, which played their home games in the afternoon.

The attendance at Shortridge's afternoon games averaged 1800 per game, as compared to our average of over 4000 under the lights. Shortridge will most likely have its stadium lighted next year.

George Washington High School installed a new lighting system this past fall, and its attendance figures should be of interest to those considering the installation of lights.

Last year, Washington averaged 1500 per game under the lights in other school stadiums; while this year in their own stadium they averaged 3000. Washington's lighting system is composed of six 100 foot poles with the same number of lights as we have.

Arsenal Technical High School is a member of the North Central Conference Athletic Association, in which each school plays football under the lights. To the best of my knowledge, the best lighted high school football stadium in the state is Muncie Central High School. They have eighteen lights mounted on each of eight poles, which gives them 144 lights of 1500 watts each for a total of 216,000 watts!

Their lights are G.E.-L69, the same as are used in the Washington and Tech lighting systems.

The cost for a lighting system comparable to Tech's and Washington's falls between \$11,000 and \$12,000 for the poles and installation.

Following are two statements by athletic directors concerning football under the lights:

"Frankfort High School has never had football without lights, except the first year. Without night football, it would be impossible for us to finance a football program."—Raymond Rohrabough, Athletic Director.

"Marion has played night football for over twenty years and our attendance has been pretty good for early games—very poor for late games. Even good teams playing late fall night games as Marion do not attract crowds. We've given a great deal of consideration to playing our late games in the afternoon."—Keith Stroup, Athletic Director.

Coaches with access to back numbers of *Scholastic Coach* may glean

a lot of practical information on floodlighting (poles, lamp units, layout, etc.) by referring to the following past articles:

"Does Floodlighting Pay?" (summary of a nation-wide survey). January 1950.

"Massillon's Fabulous Stadium," by Chuck Mather, January 1951.

"The Alhambra Floods," May 1949.

"Football Sees the Light," by Ralph Gardner, January 1949.

"Out of the Night," January 1948.

"Light Your Rec Center," by R. J. Swackhamer, January 1947.

"There's Light in the Saginaw Valley," by Marshall Simpson, January 1945.

This represents just a partial list of the floodlighting articles that have appeared in *Scholastic Coach* since 1933.



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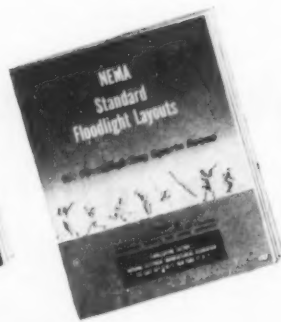
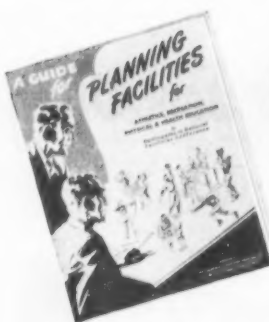
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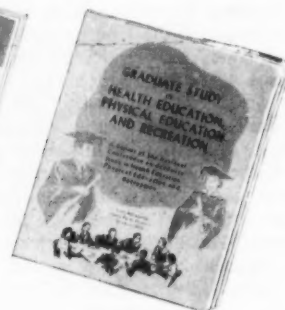
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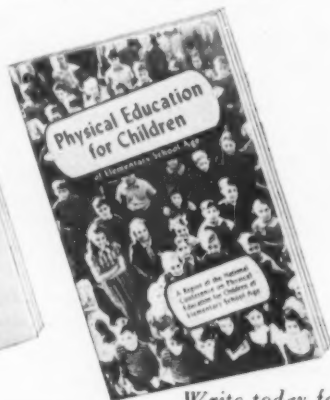
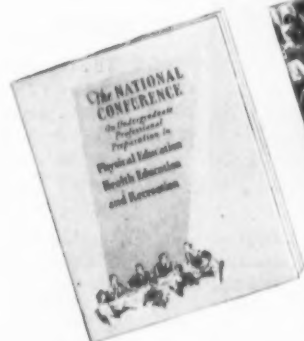
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# THE Athletic Institute

A NON-PROFIT ORGANIZATION DEVOTED TO THE ADVANCEMENT  
 OF ATHLETICS, RECREATION AND PHYSICAL EDUCATION

# An Ideal Small College Plant

(Continued from page 9)

dancing. Too often the main gym must be utilized for these purposes. Our games room enables us to carry on these functions with the students wearing street shoes.

Within the games room, next to the outside wall and directly beneath the permanent balcony on the main floor above, the ceiling is elevated to a height of some 20 feet, thus providing an area of 23 x 100 feet for apparatus work.

Included in the equipment are a trampoline, horizontal and parallel bars, horses, bucks, wrestling mats, and sundry smaller mats.

**Dressing Rooms.** The spacious varsity dressing room has built-in open booths which contain the heavy football gear (shoulder pads, hip pads, pants, and jerseys). Two smaller compartments at the top of each booth accommodate the player's helmet and shoes.

Small box lockers, together with a master-key combination lock, are assigned each player for his freshly laundered small gear (socks, T shirts, towel, and supporter). We find this plan works admirably and eliminates practically all "borrowing" or lossage.

The system functions in this manner: After coming in from the field of play and taking his shower, each player checks in his soiled socks, towel, etc., to the supply manager and is given freshly laundered gear for each piece turned in. The player then places the gear in his box locker, ready to put on when he reports the next day. This plan does away with "smelly" lockers. It also teaches responsibility and self-service.

**First-Aid Room.** Our first-aid room, equipped with massage tables,

heat lamps, diathermy machine, and whirlpool, adjoins the physical education and athletic dressing rooms.

**Addenda.** Besides the above mentioned areas and facilities, the new building includes accommodations for visiting athletic teams, replete with showers, lounges, sleeping quarters, and dressing rooms.

A large dressing room for women students is provided with individual booths, hair dryers, etc. Dressing rooms with showers and toilets are also available for both men and women faculty.

Thanks to our improved facilities and equipment, we now feel better prepared to offer a functional, well-rounded program of diversified activities.

**THE** superb new Memorial Health and Physical Education Building at East Carolina College (Greenville, N. C.) was equipped by the following manufacturers:

American Playground Device Co.  
—One- and Three-Meter Diving Board Units

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Fair Play Mfg. Co.—Electric Scoreboard

Ille Electric Corp.—Whirlpool Bath  
Lyon Metal Products—Lockers

Nissen Trampoline Co.—Trampoline

Petersime Incubator Co.—Electro-Thermo Bath

Porter, J. E., Corp.—Gym Apparatus, Badminton and Volleyball Standards and Nets, Basketball Backstops, Adjustable Treatment Tables

Raytheon Mfg. Co. — Microwave Diathermy Generator

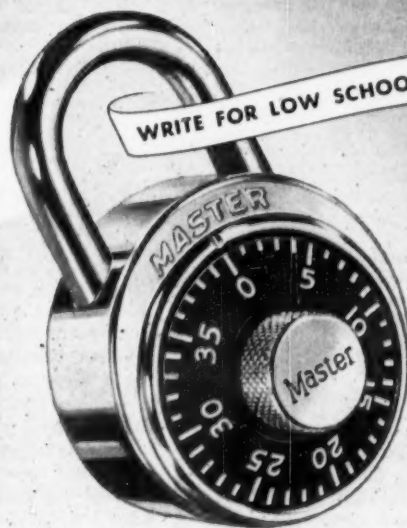
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Same as No. 1500 but has KEY-CONTROL. Each student has own combination—yet one school-owned control key opens every locker.



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# COACHES' CORNER



Please send all contributions to this column to Scholastic Coach, Coaches' Corner Dept., 33 West 42 St., New York 36, N. Y.

**S**AMPLINGS of Red Sanders' famed brand of humor, as culled from *Look Magazine*: In his first four seasons at UCLA, Sanders' teams finished third in the Conference once and second three times. He lost out two years ago when the Bruins bowed to Stanford, 21-7. Asked to explain it, Red replied: "Just look at those Stanford players: Kerkorian, Manoogian, Esse-gian. And now they've got cohesion."

*Though Sanders has a caustic tongue, much of its sting is leavened by an underlying current of humor. A sophomore attempting an unauthorized lateral hears: "Try that again Saturday, Jones, and you will have played two games for UCLA—your first and your last."*

Defining the condition of the Stanford stands after a Bruin winning touchdown, Red drawled: "They were so quiet, it was as if a world convention of undertakers had just been informed somebody had really discovered the secret of eternal life."

*Sanders' letter to a sports editor concerning his attitude (as a Southerner) about playing Negroes at UCLA highlights the facility and force of expression that have made him so popular on the Coast:*

"Your references to religion, color, and creed are somewhat vague, so I would like to make myself clear in order that we will understand each other henceforth. I am highly prejudiced and my attitude might be considered discriminatory with regard to football players. I am very intolerant of people who cannot block and tackle."

*The first visitor to reach Frank Leahy's bedside after his collapse during the Notre Dame-Georgia Tech game found Frank sitting up, blaming himself for "letting the lads down."*

While friends were still worrying over what they thought was a heart attack, Leahy was berating himself for his weakness. His first question naturally was: "What was the final score?" His visitor beamed, "We won, 27 to 14!" "27?" Leahy murmured. "That means we missed an extra point!"

*Was there ever a high school coach who could point to a crack pro team and claim, "Both those ends are my boys!" We know one—Duane Maley, coach of San Diego (Cal.) H. S. Both of the San Francisco 49er defensive wings are Maley-coached players.*

## When the Pressure's On

How do you act  
When the pressure's on.  
When the chance  
For victory's almost gone.  
When Fortune's star  
Has refused to shine.  
When the ball  
Is on your five-yard line?  
How do you act  
When the going's rough.  
Does your spirit lag  
When breaks are tough?  
Or is there in you  
A flame that glows  
Brighter as fiercer  
The battle grows?  
How hard, how long  
Will you fight the foe?  
That's what the world  
Would like to know!  
Cowards can fight  
When they're out ahead:  
The uphill grind  
Shows a thoroughbred!  
You wish for success? —  
Then tell me, Son,  
How do you act  
When the pressure's on?

—J. Fred Lawton, Michigan  
H. S. A. A. Bulletin

Charlie Powell joined the 49ers straight from high school, while Bob Van Doren had a stop-off at USC. Quite a feather in Maley's beanie.

*Colgate was steam-rolling over Hamilton back in 1909. Desperate measures were called for, and Coach Buck O'Neill singled out a sub. "Miller," he snapped, "go in for Doyle at center. Move around, play anywhere you think they'll strike. But stop that running attack."*

Miller rushed in and obeyed orders to the letter. He roved from side to side, making tackle after tackle. Colgate was stopped cold, and Hamilton went on to win. As Miller walked off the field, Coach O'Neill rushed over to him. "Great game, boy!" he enthused. "Once you got in there, our defense sure stiffened."

"Coach, I've got something to tell you," Miller answered bashfully. "Doyle never came out." (Relayed by Coach Norm Daniels of Wesleyan.)

*Tommy Webster, the famed British sportswriter, originally came to America for the Louis-Baer fight. When Baer, who regarded himself with a wild passion, was introduced to Webster the first thing Max asked was, "What do the people of Great Britain think of me?"*

Webster casually looked Baer up and down. "It's impossible for them to sleep," he replied, "they think of you so much."

After Baer was knocked out, an American reporter informed Webster Louis had been married just before the fight.

"He could have been married during the fight," said Webster, "and still won it."

*The frail British heavyweights of the 20's amused Webster. Covering the Phil Scott-Jack Sharkey fight in Miami, Tommy sent dispatches back to his newspaper which described Scott as Foul Scott and Phil Squat. But a humorless copy reader thought the message had been garbled in transmission and edited every reference to read Phil Scott. After Scott finished as a fighter, he became a barber.*

"It was the first time," said Webster, "that Scott ever stood over any one who was sitting down."

*One of the most complete listings of instructional and general sports books ever to be compiled is being offered free of charge by SportShelf, a firm which handles American and British books and films. The catalog is extremely attractive and exhaustive, and is just the thing for both book collectors and people who have just occasional need for some sport or physical ed text. The listings cover just about every sport extant. If you'd like a free copy of this superb catalog, drop a card to SportShelf, 10 Overlook Terrace, New York 33, N. Y. (All books listed may be ordered directly from them.)*

Since he was a hard worker, a good sport, and an avid fan, the freshman was chosen varsity basketball manager even though his athletic background wasn't too solid. Everything went along fine during the opening practices as the manager familiarized himself with his duties. However, at a later session, a player stuck his head into the training room and requested the medicine ball. The eager kid rushed out on the floor. "Who's hurt?" he asked excitedly. (Submitted by William A. Weathers, Petersburg, Ind., H. S.)

Gene Hawes, editor of "The Columbia Alumni News," relays this one, and has proof it's true, about the two alumni, one of Columbia, one of Cornell, who made a bet just after graduation on the football game between their respective institutions. Having graduated in June of 1921, they decided that the backer of the losing team would return to college and stay there until his team won.

Columbia lost that year, 41 to 7, so the Lion grad received, the next June, two more degrees to add to his A.B.—an A.M. and a B.S. in business. Columbia lost again the next year, but good, 56 to 0, so the following June the young Lion also had an M.S. in business. He was beginning to realize by this time that he was in for a long pull of further schooling. So he entered Columbia Law School. He received his law degree in the spring of

1926 after three more losing efforts. Columbia won that fall, 17 to 9.

The gentleman is now an esteemed member of the New York bar, with the following degrees: A.B., A.M., B.S. in business, M.S. in business, LL.B.

That Niagara-Siena cage tilt last Feb. 21 sure was a doozy. Niagara licked Siena, 88-81, in six overtime periods—the longest game in college history. The contest started at 9:15 p.m. Saturday and terminated at 12:17 a.m. Sunday morning. The score, period by period, follows:

|         |    |    |    |    |   |   |   |   |   |       |
|---------|----|----|----|----|---|---|---|---|---|-------|
| Niagara | 14 | 11 | 15 | 14 | 7 | 2 | 7 | 2 | 4 | 12—88 |
| Siena   | 9  | 15 | 12 | 18 | 7 | 2 | 7 | 2 | 4 | 5—81  |

In all, Niagara committed 24 personals and lost five on fouls, while Siena committed 20 and was deprived of only one man. Eddie Fleming played the full 70 minutes for the winners and his jersey number was changed to 70 in recognition of the feat. Larry Costello, who broke the game wide open just before fouling out 20 seconds from the end, had his number changed to 69.

Mather Air Force Base in California played a game against the College of Idaho recently and a reporter called the air base to find out the score of the game. The Army man at the other end said he was not permitted to give out any information.

Later the scribe discovered the reason for the security blackout. Mather Field had lost, 64-0.

It certainly pays to be a Yankee. Take Frank Crosetti, for instance. He's made \$82,000 in World Series cuts alone! He's been in 14 of them as a player or coach. And then there's Charlie Silvera. Though he's done very little catching the past five years, thanks to Yogi Berra, Charlie's been on the receiving end of five fat Series checks totaling \$32,000! Not bad for a member of the scrubs!

Bob Feller hasn't always been favored by a generous press. On more than one occasion he's been called "uppity" and "all-business Bob." But you'll never be able to prove it by the kids in Erie, Pa. They're still talking about his generosity toward them—with both time and money.

Rapid Robert provided a new twist by going to Erie for a free baseball clinic for the Little Leaguers and then sent along his personal check for \$500, to help along their program next season. . . . Feller was accompanied by three other Cleveland players, Early Wynn, Bob Hooper, and Bill Glynn. Bob also promised to make another appearance in October after the season to show some films to the kids along with a lecture on how major leaguers play the game.

At Ebbets Field everything happens. As witness the public address announcer informing a hushed audience: "A small boy has been found lost."



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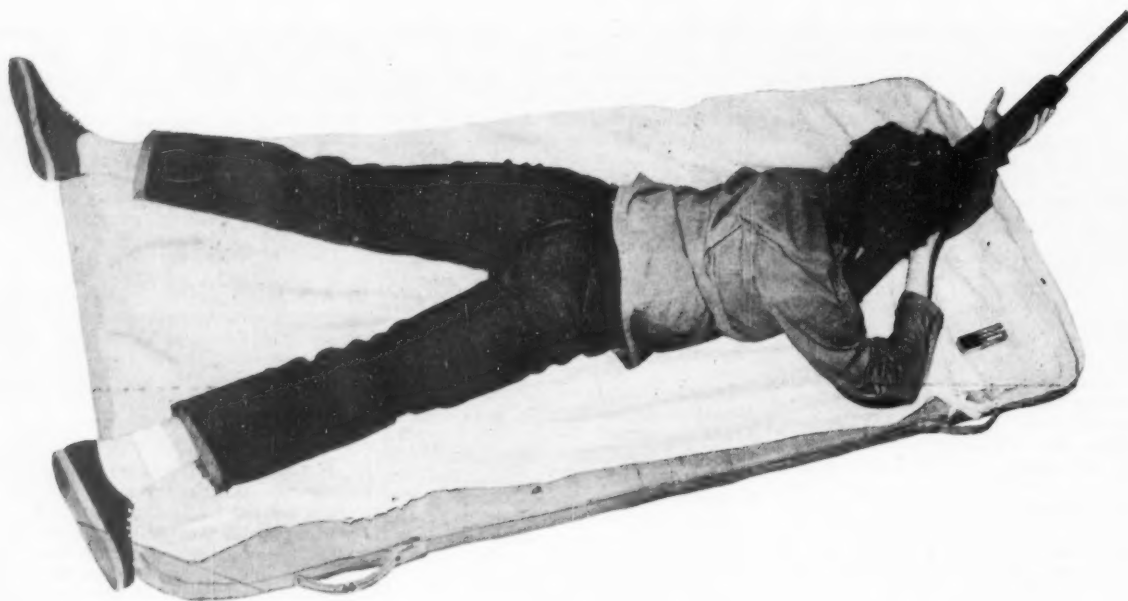
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# Girls Behind the Guns!

**T**HOUGH the popularity of girls' riflery has waxed and waned over the years, it is currently doing considerably more waxing than waning.

At the U. of Missouri last fall, Capt. Norbert H. Walsh opened an indoor shooting gallery at Crowder Hall—once exclusively a cadet headquarters—to the co-eds for a few hours a week. The girls, many of whom had never held a rifle before, turned out enthusiastically. Sacrificing their coffee-hour breaks between classes, they squeezed in as many hours as they could on this extra-curricular activity.

Since no similar clubs existed in nearby schools, the team could only compete in postal matches. Capt. Walsh and his assistant, Sgt. James E. Marshall, entered the team in "mail" tournaments with such far-flung schools as Loyola University at New Orleans, and the universities of Chicago, New Hampshire, Washington, and North Dakota.

Believing that anyone can learn to be a marksman, Capt. Walsh trains every girl who signs up for classes in smallbore rifle target shooting. Beginning with slow fire in the prone position, he advances his class to the other three positions—sitting, standing and kneeling—during the year.

With a minimum of two hours practice a week, he has proved that a girl will show steady progress in this, the most accurate type of target shooting in the world.

By **PATRICIA FARMER**  
*University of Missouri*

The girls are issued standard equipment, including shooting coats, gloves, ground mats, and eye patches, if desired. Gallery gear is blue jeans and old shirts, while the rifles are equipped with slings and peep sights. Students pay only for their ammunition, .22 long rifle cartridges.

The range is 50 feet long. Under NRA regulations, galleries may have ranges of 50 or 75 feet; 50, 100 or 200 yards; or 50 or 100 meters.

Capt. Walsh outlines his instructions in a general four-step program: (1) sight pictures, (2) position and sling adjustment, (3) trigger squeeze, and (4) knowledge of sight adjustment.

He and Sgt. Marshall keep close and constant supervision over the girls while they are firing, analyzing the shots and pointing out errors as they are made. As yet they are not timing the girls, but encouraging them to go slow and make each shot count. Above all, they do not allow beginners to become discouraged.

Sight alignment is demonstrated first with film slides and drawings showing how the sight picture should look, with the bull's-eye exactly tangent to the front sight. If the picture in the sight gets fuzzy, the girls are told to stop, relax, take a breath, and start all over again,

because the shot is probably ruined.

They are told to take the position they find most comfortable, following these general rules:

1. Body at a 45° angle with the target, and spine at a 30° angle with the gun.
2. Toes turn out, legs apart, and heels touching the ground if possible.
3. Left elbow directly beneath the gun.
4. Left wrist straight.
5. Rifle resting in the V formed by the left thumb and forefinger, and against the heel of the hand, with thumb and fingers relaxed.
6. Rifle butt securely in the shoulder, cheek resting firmly against the stock.
7. Trigger grip between the fingertip and second joint.

The common errors in position include: keeping the right elbow too close to the body, the left elbow not being as far under the gun as it should be, and an improper grip due to the fact that the wrist isn't straight.

Capt. Walsh emphasizes relaxation, explaining that the weight should be supported entirely by the bones, with no muscle tension whatever. Ordinarily, girls cannot fire over two hours straight and maintain maximum accuracy. When they begin to tense, they are urged to stop, even if in the middle of a round.

Trigger squeeze, the biggest bug-



boo to getting a bull, is taught as merely a steady increase of pressure on the trigger, so that the shooter cannot tell when the rifle will fire. This eliminates jerking or flinching, as she cannot tell when to anticipate the kick, and allows her to keep a perfect sight alignment.

Along with the correct squeeze, the instructor teaches correct breathing, another tough fundamental for beginners. He tells them to take an ordinary breath, aim, let out about half the breath, close the throat, and hold the remaining air while firing. Any body movement will pull the sight out of line, and only a lucky shot will get a bull if the firer is breathing while squeezing the trigger.

Before going on target, the instructors have the girls fire at sighter strips until they get a complete sight pattern. They learn in classroom sessions how many clicks of the wheel a six o'clock in the seventh, for instance, will call for. They are taught to call their shots and adjust their own sights.

The instructors watch each shot through sighters, but do not tell the girl her score until a round is complete. They do, however, tell the firer to hold her position for the round when a bull is made.

Although both Capt. Walsh and Sgt. Marshall are expert riflemen, coaches do not have to be sharpshooters. The coach's duties, while essential, are mainly supervisory—correcting positions, watching for jerking or flinching, checking breathing and trigger squeeze, and recording scores.

A fundamental knowledge of these things, plus a lot of patience, is all a coach needs to train a crack girls' rifle team.

Many junior highs, high schools, and colleges are starting classes and clubs under the N.R.A. Upon request, its office in Washington, D. C., will furnish instructors or coaches with data and material for setting up instructional programs in their schools.

### H.S. COACH OF THE YEAR!

Our vote for the high school coach of the year goes to Pigeon Riley of Ketcham, (Okla.) H. S. Here's why:

He has a 13-boy football squad and still wins most of his games.

He is the school principal.

He teaches biology, social science, and anything else that presents itself when one of the teachers is absent.

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He finds time to coach the girls' basketball team.

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# A High School Fieldhouse

(Continued from page 14)

## THE SURFACE STORY

The surface for the area surrounding the basketball court was the big question mark as building plans progressed. After visiting four field houses in Illinois and Wisconsin, the planning committee unanimously agreed that clay, cinders, and sawdust—in any combination whatever—didn't make a satisfactory general activity area because of (1) the dust, dirt, and mud problems, (2) the continual work and expense of daily sprinkling, and (3) the endless task of marking lines for courts, lanes, etc.

Several other possible surface materials were also rejected, one of the chief reasons being that they proved too hard for track spikes to penetrate. It was then that Athletic Director Owen Metcalf advanced the idea of developing a track surface that would be resilient and slip-resistant, thus eliminating the necessity of spikes.

Since all indoor game shoes are rubber-soled, it followed that a smooth RUBBER surface would make the best non-slip top—providing as it would a rubber-on-rubber contact.

After considerable application to the problem, we realized that since round particles possess no cohesive qualities, the rubber would have to come in small strands. That raised another problem—there was no machine for making small strands. We knew improvisation was in order.

A visit to a tire re-capping shop furnished the ultimate answer. These shops use spike-covered cylinders, revolving at a high rate of speed, to rip off the remaining parts of the old tread and leave the tire foundation covered with lacerations so that the new tread will weld onto the old.

These shreds of rubber proved to be just the material we needed for our track and floor. When bound together with emulsified asphalt (asphalt and water homogenized) and treated with a chemical agent to prevent the asphalt from becoming sticky in hot weather and from discoloring the athletic equipment, the rubber shreds provided a "dream" surface. The asphalt made the particles stick together, while the actual rubber provided the resiliency.

The problem of obtaining suf-

ficient rubber strands was solved by contacting a Chicago tire-recapping firm. The rubber strands from a day's work of recapping truck and bus tires amounted to one cubic yard. Since one cubic yard will cover 72 square yards one-half inch thick, 21 cubic yards were needed.

During the year, we experimented with different thicknesses of the asphaltic rubber mat, using a tennis court on the Crystal Lake campus. Mats of different thicknesses, varying from two inches down to a fourth of an inch, were laid out on this court. The athletic teams and physical ed classes ran across these mats, subjecting them to every kind of shoe—street, gym, track spikes, baseball spikes, football cleats, golf spikes, and soccer studs.

At the start of the experiment, Director Metcalf intended to restrict the rubber surface to the running track. But after observing its toughness and indestructibility on the tennis court proving ground, he changed his mind. He decided to lay down a half-inch layer of the asphaltic rubber on the entire field house floor surrounding the basketball court!

We realized at the outset that the half-inch mastic coat needed the

support of a strong base underneath. For this purpose, we decided to employ the less costly of the asphaltic concretes, since sandy materials treated with emulsified asphalt have produced the most fool-proof and highly successful bases known to the road building profession.

The field house floor was brought up to within two inches of grade, using ordinary excavated fill. The track pole was curved from wooden 2 x 4's, while the pit boundaries were outlined with 2 x 8's. All wood was graded to the same level as the basketball court.

Next, two inches of crushed, bank-run, road gravel was screeded to grade. (Largest stones, one inch, with all the finer particles remaining. Gravel pit was located just outside Crystal Lake.) This variation of large to small particles made a mixture that packed solidly into place.

This layer was soaked with liquid asphalt, type B, emulsified and thin which dried out slowly, thus penetrating deeply into the loose gravel. (Any asphalt thinned with petroleum products causes the rubber to deteriorate.)

The asphaltic rubber coat completed the floor, and it was ready for use in March. Its use during the ensuing three months convinced the most skeptical that here at last was the ideal field house floor. Boys using the track said that it was like running with wings on their feet—the resilient rubber giving their tired feet an easy landing and fast pick-up.

During the summer, some color was added to furnish additional reflection of light. The area from the basketball court to the track pole was treated with red coloring materials, while the area from the pole to the wall was treated with green.

The track lanes and the game courts have been permanently lined with bright colors, using a rubber base paint emulsified and homogenized with water—the same as the asphaltic binder. (Any paint that contains oil or turpentine will dissolve the asphalt.)

What is the future of the asphaltic rubber surface? I predict that:

1. It will become the universal surfacing material for all school playgrounds, game courts, walks, and driveways.

2. It will be accepted for the outdoor track, the gridiron, and the baseball infield because of its resiliency, all-weather characteristics, and no upkeep expense.

3. The four-minute mile will become an annual affair once we get a few of these rubber tracks outdoors.

*"THE revolutionary Crystal Lake fieldhouse is in a sense a monument to the intelligence, imagination, and daring of Owen Metcalf, athletic director for the past 28 years. Mr. Metcalf has won many citations for his splendid educational achievements, and all of Crystal Lake has confidence in his ability and respect for his judgment. This serves as a splendid example of how it pays to stay on one job and turn it into a superior one, rather than moving on whenever the grass looks a little greener across the way. The Crystal Lake school board also deserves a great deal of credit. When difficulty arose in the early stages of construction, they told us to go ahead and experiment 'then bring us the bills when they need paying.' Boards like that are one in a million!"*

—O. R. Barkdoll

## Call for Rubber

(Continued from page 20)

the National Junior College Athletic Association.

The rubber-covered basketball was accepted as official shortly thereafter by the same athletic governing bodies.

In the beginning, the rubber-covered footballs were more or less crude, judging by today's standards, and were used only on playgrounds and in some physical education classes. But constant research and development brought the rubber-covered football to the point where it now surpasses the leather in wear and ruggedness, besides satisfying the necessary requirements of size, weight, and shape.

### IDEAL FOR NIGHT

Because of their rubber covering, the balls are ideal for night games and games played in wet weather. The cover sheds water and the ball therefore doesn't gain weight or change shape, as do some leather balls.

I understand it was this fact which made the ball such a big success in the Pacific Northwest, particularly in Washington where every high school, college, and university has a supply of them. The Pacific Northwest, as you're probably aware, gets its share of rain during football season.

Basketballs also serve to illustrate the tremendous trend towards rubber-covered equipment. Rubber-covered balls comprised more than 70% of the total basketballs produced in 1952—and basketballs are the biggest dollar item in the athletic ball business.

You might also be interested to know that more than 75% of all soccer balls and 65% of all volleyballs are rubber. Though footballs don't yet come up to these high ratio production percentages, the trend is definitely on the upswing.

We don't limit our purchase of rubber and rubber-covered equipment to basketballs and footballs. We also use the rubber water polo ball, the baseball batting tee, the rubber home plate, and rubber-covered baseballs, among others. The rubber-covered baseball is another product which helped us save money.

Just remember, when spending the school's money, buy the top-grade rubber ball and, though the ball won't stretch, your budget certainly will.



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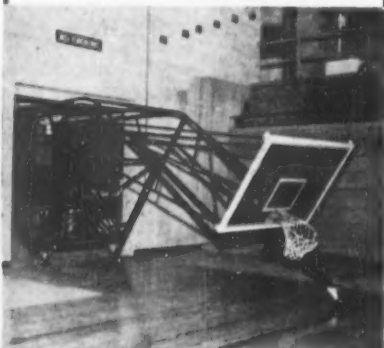
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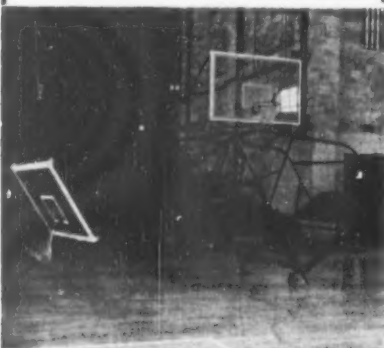
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## DICK MOREY

613 WASHINGTON ST., ABINGTON, MASS.

## "Here Below" Editorials

(Continued from page 5)

And who cares about the offensive right guard. We defy anybody to produce a spectator who has eyes for anybody but the runners, passers, and pass receivers—who are always in there on offense.

Yipe! We started this editorial very objectively, and here we are loudly shilling for the two-platoon game. Actually, we don't feel that strongly about it. Yet every process of logic leads to an inescapable conclusion: *Since the restricted sub rule apparently doesn't reduce the overhead and doesn't reduce the injuries, BUT does reduce the quality of play, how can you be for it?*

And just as important: How can you be for anything that confines such a stimulating experience as football to about 17 or 18 players when it could just as easily be offered to 35 or more?

And so we say to the rules men, "Sit down those iron men—they're tired anyway—and get those fresh, eager bench-warmers into the game."

### "HYPOCRISY" OF FOOTBALL

WHEN we heard that Jeff Cravath had bared his soul on the hypocrisy of college football in the October 30th issue of *Collier's*, we had to resist an overwhelming impulse to yawn.

Soul-baring is an old American pastime indulged in by retired coaches looking for a little publicity and a lot of those fat author's fees.

It's almost impossible to work up any respect for these whistle-blowers. More often than not, they've taken enough money out of the game to fix 'em for life. And never during their careers have they declaimed against a wrong or lifted a pinkie to better a condition. They've just gone along with the system, keeping their hand out and their neck in.

The sudden surge of courage comes with retirement—or firement—when, accosted by an editor brandishing a fat check, they start shoveling out the dirt.

That was our feeling when we heard about Cravath's expose. And that still is our feeling. Nevertheless, Cravath's exposition merits serious reflection. Besides waving a lot of dirty linen, he delivers a few

thoughts that should give all of us pause.

What's wrong with college football today? There's nothing wrong with the game. But the system controlling the game is pure hypocrisy. You may read that faculty leaders have agreed to curtail spring practice, limit athletic scholarships or take other measures to de-emphasize college football. But the decrees actually have little effect.

Despite resolutions of purity, college football still has most of the evils it accumulated in becoming a big business. There are still million-dollar athletic plants to pay for, bowl games to compete for and athletic programs to be financed. Nearly all colleges still playing big-time schedules have been forced into the open market to obtain their raw material. They must bid for the best players—and make concessions to keep them. The fact that the system reduces the boys to perjurers, scalpers and football gigolos is ignored.

To keep up the pretense of purity and still produce winning football teams is no small job. And the central figure in the intrigue is usually the college president. Consider his position. Colleges, even state institutions, need money to survive. In 99 cases out of 100, the money must come from wealthy alumni, or, in some state schools, from legislatures which are dominated by politically prominent alumni. The alumni demand winning football teams. To get winning teams, colleges must violate the rules they themselves have made.

A college president must know the corrupt practices that are being used to build his football squad. But if he tries to stop them, he runs afoul of prominent alumni on the board of trustees or board of regents, or alumni with endowment-available money. The president needs that money to keep his school going. What does he do? Except in the rare cases where the school has dropped big-time football, he usually turns over control of the sport to a member of the faculty whom he designates as faculty athletic representative.

The president tells the new appointee to introduce whatever rules are necessary to curb the evils. Then he turns his back on the activities of alumni and the football coaching staff, who must break these same rules if they are to produce winning teams. There isn't a coach of a major school in the nation who wouldn't like his president to call him in and say, "You stick to the rules and I'll stand behind you, win or lose." . . .

Most coaches believe this paradoxical situation and many other evils that mar college football today could be eliminated if control of the game were taken out of the

hands of well-meaning but non-dering faculty athletic representatives and given over to the men who know college football best—the athletic directors of the schools.

I estimate that 80 per cent of the faculty athletic representatives administering college football today have never competed in any sport. They are about as well qualified to supervise football as a football coach is to decide the curriculum for a law school.

I have no personal quarrel with faculty athletic representatives, almost all of whom are fine men. I feel they are out of their element in football.

Some of the rules conceived by faculty representatives of the Pacific Coast Conference, whose code is similar to that of the Big Ten and other major conferences, are so impractical and so out-dated that a coach has no choice but to cheat if he is to produce the teams demanded by his own administration. . . .

Most coaches are aware that something must be done about college football—but what? First, I believe, the administration of the game should be placed in the hands of the athletic directors and the office of faculty athletic representative abolished. Next, college presidents should inform their alumni that every school can't win every year, then stand unswervingly behind their coaches and athletic directors.

Once the athletic directors were in charge, I feel that their first step to eliminate cheating in football would be to establish a uniform National Collegiate Athletic Association scholarship plan. The scholarships should provide athletes with room, board, tuition, books, school supplies and part-time jobs yielding a modest amount of spending money each month.

I think the rule prohibiting material inducements to high-school prospects should be rigidly enforced, with the responsibility falling on the athletes as well as on the institutions. If a boy should be convicted of accepting anything beyond that permitted by the NCAA, he should be declared ineligible at every school in the organization. Under such circumstances, no coach would be likely to encourage alumni to make reckless offers that would jeopardize a boy's athletic future. Nor would the boy's father and mother be inclined to place their son on the auction block.

How much more effective all this elocution might have been if Cravath had uttered it in a loud, clear voice anytime during his 15 years as a coach!

(Shortly after this editorial was set in print, we were distressed to hear that Jeff Cravath had died from injuries sustained in an auto accident. Though this article may be construed as critical of Cravath, nothing personal was intended. We always found him to be a generous straight-thinking and straight-talking gentleman.)

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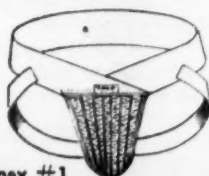
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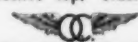


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- **GOLF MADE EASY.** By J. E. Kavanagh. Pp. 59. Illustrated—photos. New York: The William-Frederick Press. \$2.

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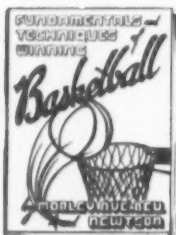
- **HOW TO IMPROVE YOUR SOFTBALL.** Consultants: Dan Lipinski, Jimmy Walsh, and Marian Kneer. Pp. 119. Illustrated—photos and diagrams. Chicago: The Athletic Institute. 50¢.

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• **THE HERMAN HICKMAN READER.** By Herman Hickman. Pp. 206. Illustrated—cartoons. New York: Simon and Schuster. \$2.95.

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### Miscellaneous

• **Recreation in the American Community.** By Howard G. Danford. Pp. 464. New York: Harper & Bros. \$5. (An excellently written, exhaustive treatise that presents not only the principles and values of organized recreation activities but also the practical operational problems of organization and administration.)

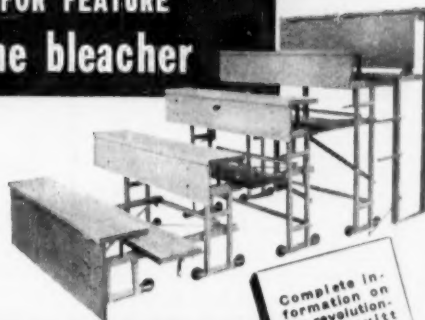
• **The Story of Pro Football.** By Howard Roberts. Pp. 325. Illustrated—photos. New York: Rand McNally & Co. \$4.95. (A thoroughly absorbing, thoroughly enjoyable story of the pro game, club by club, hero by hero, and outstanding game by outstanding game.)

• **Fitness and Injury in Sport.** By S. S. Knight. Pp. 189. Illustrated—photos and drawings. New York: D. Van Nostrand Co. \$4.25. (Written by an outstanding English training authority, the book presents a study of the care, diagnosis, and treatment of injuries with emphasis on conditioning.)

• **1953-54 North American Soccer Guide.** Edited by Bill Graham. Pp. 144. Illustrated—photos. New York: William Graham. (Replete with the rules, 8 instructional articles by famous internationalists, and all the 1952-53 records.)

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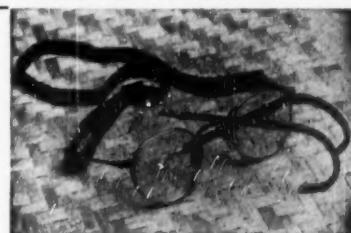
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## 7-Man Charging Sled

(Continued from page 11)

to the figures quoted previously, depending once again on whether you selected seasoned or green lumber.

The writer believes that larger runners would make the sled too heavy for practical purposes. If additional weight is desired, you can always have other players ride the sled.

**Hardware.** Throughout the construction of the seven-man heavy-duty sled, use  $\frac{5}{8}$ " carriage (round) head bolts with square shanks. It won't be necessary to use flat washers next to the heads of the bolts, since the square shanks serve the same purpose.

It's advisable to use both flat and locker washers on the threaded end of the bolts before putting on the nuts. All flat and lock washers will be  $\frac{5}{8}$ ", and 124 of each type will be needed. The following  $\frac{5}{8}$ " bolts will be used in the construction of the sled: thirty, 5" bolts; thirty-six, 6" in length; thirty-seven, 7" bolts; twelve, 10" in length; and nine, 12" bolts.

Nails won't be used, except to temporarily hold several boards in place while marking them and when determining the slope or pitch of the charging surfaces (D). Tacks will be used to fasten the canvas over the padding. The 124 bolts and 248 washers will weigh approximately 100 lbs., and shouldn't be overlooked in calculating the total weight of the sled.

### PLANS FOR ASSEMBLING

In assembling the sled, make certain that all pieces are centered, parallel and/or perpendicular to each other, as indicated by the instructions and drawing. When assembling, do not draw up the bolts too tightly. The sled should be assembled in the following manner:

1. Inserting three 10" bolts from the bottom side, bolt rear brace K to runners A, 12" from the tapered ends. Outside dimensions from A-1 to A-3 will be 16". Therefore, A-2 will be centered at 96" from the other two runners.

2. Inserting three 12" and three 10" bolts, from the bottom side, bolt buffer H and support G to runners A, 9" from the front end of the runners.

3. Measure 48" from the front edge of boards G and H, and mark a line on the top side of runners A. Line up the back edge of baseboard J and buffer I with marked line on the runners and insert six 12" bolts from the bottom side of A. The inside dimensions from H to J will be 32".

4. Place wedges L between charging surfaces D and sloped braces C, and insert fourteen 7" bolts from the front side through the D-L-C's.

5. In order to determine the desired slope or pitch of brace C and charging surface D, it's necessary to set one D-L-C in place on runner A. The slope or pitch should be approxi-

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mately 11"-13" and will be the same in both boards C and D. Use finishing nails to temporarily set one diagonal brace B, and front support F, in place. In order to give maximum support to sloped brace C, it is important that front support F be as snugly against C as possible. As a guide, in order to get the desired slope of boards C and D, the gap between boards F and G-H will be approximately  $2\frac{1}{4}$ "- $2\frac{1}{2}$ ". Re-check again for accuracy, mark on sloped brace C where buffer E will be bolted. Also mark where front support F will be bolted to runners A to give maximum support to C. In all probability, the front edge of F won't be flush with the front end of runners A. Remove the D-L-C and B. Bolt support F in place on A by inserting six 10" bolts from the bottom side of the runners.

#### FASTEN FRONT END

6. Using sixteen 5" bolts, fasten the front end of baseboard M underneath and at right angles to support F. Using sixteen 7" bolts, fasten the other end of baseboard M underneath and at right angles to boards G and H. Sloped braces C-1, C-4, and C-7 will rest mostly on runners A-1, A-2, and A-3, respectively. Two M boards will be bolted flush against A-1 and A-3. It will be necessary to have one M board, 2" x 10" x 13", halved lengthwise, to bolt flush against each side of runner A-2.

7. Use four 5" bolts in fastening front buffer E to sloped braces C-1 and C-7. As a guide, front buffer E will be bolted to C approximately 18"-21" from the top of the sloped braces, depending on the desired pitch of charging surfaces D. In step (5) this was determined by an accurate method, however.

8. Set assembled parts D-L-C-E in place on runners-baseboards, A-M-1 and A-M-7. Set diagonal braces B-1 and B-7 in place up against front buffer E and rear buffer I. Check again for accuracy and desired pitch of C and D. Make certain front support F is tight against sloped braces C. Use four 6" bolts in fastening diagonal braces B-1 and B-7 to sloped braces C-1 and C-7, respectively. Use four 6" bolts in fastening B-1 and B-7 to baseboard J.

9. Sloped braces C are bolted to both boards M and G for maximum support. One 6" bolt goes down through boards C-M, and a 7" bolt goes through the width of board G, the thickness of board C, and comes out about front support F. Use two 6" bolts in fastening C-1 and C-7 to baseboard M. Use two 7" bolts in fastening support G to sloped braces C-1 and C-7.

10. Repeat steps (7), (8), and (9) in fastening buffer E to sloped braces C with ten 5" bolts; diagonal braces B to sloped braces C with ten 6" bolts; diagonal braces B to baseboard J with ten 6" bolts; and sloped braces C to baseboard M with six 6" bolts. C-2



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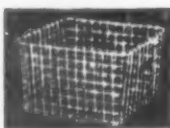


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will have two baseboards—one on each side of A-2. Complete the bolting of the sled by using five 7" bolts in fastening support G to sloped braces C.

It isn't necessary to bolt C-1, C-4, and C-7 to A-1, A-4 and A-7, respectively, since the C braces are bolted to the M boards. In the event one wishes to do so, however, one would use three 10" bolts.

### COMPLETING THE SLED

Little remains to be done once all of the bolts are drawn up securely. Padding the charging surfaces is not a difficult task. Tie several layers of felt padding securely in place and then cover with canvas material. Use upholstery tacks driven into the edges of the charging surfaces to securely fasten the canvas in place. Complete the sled by giving it two coats of paint.

The finished product is a low-cost seven-man charging sled weighing approximately 1375-1400 pounds; that is, if seasoned white oak has been used. It will weigh approximately 400 pounds more if green lumber is used.

If the sled is found to be too heavy for practical purposes, bolt three 1/2" x 4" x 9' steel runners to the ends and bottom side of runners A. Thus, less energy will be expended by the players in moving the sled, and the steel plates will protect the wooden runners.

This heavy-duty sled should last for years.

## Abbreviated Tramp

(Continued from page 22)

twist to backdrop into back pull-over.

Front 1 3/4 somersault to a back drop.

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January 1954

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